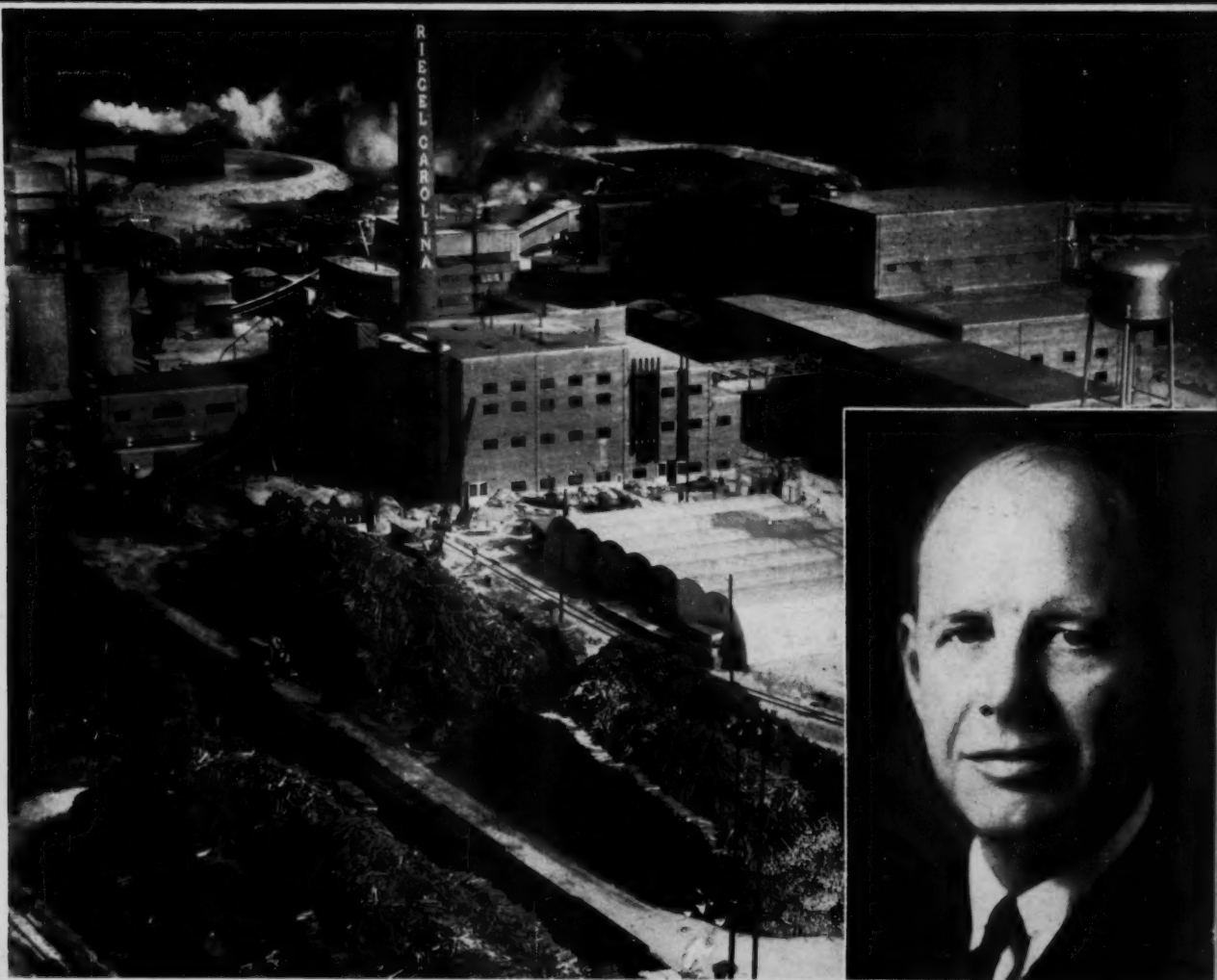


# PULP & PAPER





## 80 years until harvest time

Douglas fir forests, which supply raw material for most of Weyerhaeuser's mill sites, require 80 years to grow a seedling into a tree of mature size. Contrary to popular belief, only a small part of the total program of reforestation is accomplished by artificial planting and seeding. The primary reforestation job is the restocking of cut over land as old growth timber is harvested. This is being done by natural reforestation with seed supplied from blocks of trees reserved during logging and left standing to reseed the adjacent cut-over area. Where natural seed sources have failed, artificial reforestation by sowing tree seeds with helicopters or mechanical seeders is used.

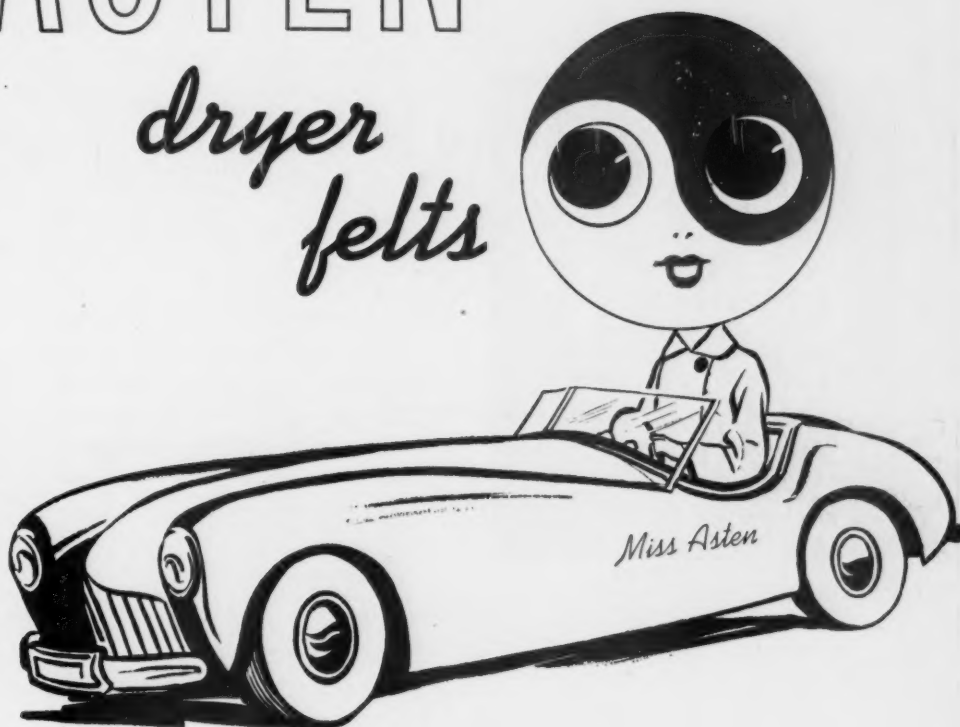
As more and more virgin timber stands are logged in the forests under Weyerhaeuser management, the harvested land begins growing new trees. As the supply of mature timber diminishes, it will be replaced by a steadily increasing volume of new growth.

There are good possibilities of increasing the yield from this land through silvaculture research and intensified forestry and harvesting practices. Thus Weyerhaeuser's twin goals are a *sustained* and *increased* yield of cellulose products from its 2,500,000 acres of timber land.



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*dryer  
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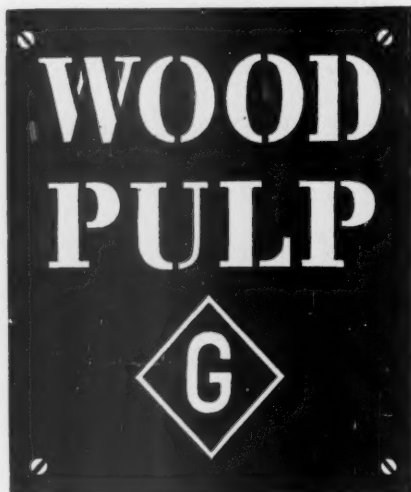
## ***Economy in the long run***

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# PULP & PAPER

"The Cellulose Age"  
PRODUCTION AND MANAGEMENT JOURNAL  
OF THE  
NORTH AMERICAN PULP AND PAPER INDUSTRY

A MILLER FREEMAN PUBLICATION

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## Forestry Policy and FAO

Certainly no one will want to argue with the declaration of principles governing the formulation of a forest policy set forth by the Forestry Division of FAO at its 6th session in Rome. The declaration begins by recognizing that forest conditions vary widely from country to country; that there are differences in forms of forest ownership; and that economic exploitation and efficient utilization of forest products necessitate the application of different techniques and administrative procedures.

The principles to govern the formulation of a forest policy are then set forward by the FAO division as follows:

1. Each country should determine and set aside areas to be dedicated to forests, whether at present forested or not.
2. Each country should apply the best practicable techniques in seeking to derive in perpetuity, for the greatest number of its people, the maximum benefits available from the protective, productive and accessory values of its forests.
3. Adequate knowledge of all aspects of forest resources, forestry, and the consumption and utilization of forest products, is indispensable.
4. Public consciousness of forest values should be developed by all means possible.

In respect to the first principle, FAO adds that the setting aside of areas for forest growth should be done progressively, if necessary, "but always in accord with the country's economic and social policy and taking into account the close interdependence of all forms of land use." So with this reservation, it is hard to find anyone in the United States that would want to take issue with the FAO declaration.

But there are questions about FAO forestry activities that many men interested in the forest products industry in the United States would like to ask. Some of these questions were posed to PULP & PAPER by the head of a forestry association not long ago:

Who represents the United States on forestry matters with FAO? The Forest Service? Professional forestry organizations? The State Department? Who?

What is the contribution of the United States to FAO and specifically to the Forestry Division? Is it a contribution of technical assistance? Money? Or what?

Is there a division of the forestry organization of FAO in the United States? Or is every thing at the headquarters of the organization in Rome?

How would professional forestry organizations in the United States be able to express themselves on policy matters, or be able to offer assistance to FAO where they felt they could contribute with ideas, or manpower?

These are questions which certainly should be answered by FAO. Professional forestry organizations in this country have far

too hazy an idea of what FAO is doing, and considering the contribution being made by the United States to this activity they are fully entitled to know. If it is work that is good, they want to assist it. But they can't assist it until they understand it. And if the United States is not ashamed of its work with FAO, then it should make clear to its foresters, who are most directly concerned, just what it is doing. And this means not just the foresters of the U.S. Forest Service, but the professional men who guide the destinies of the United States forest products industry.

## Good News from India

Good news for the paper industry:

A report from New Delhi says India has raised its literacy rate from 13.5% to 18% since 1947 (year of its independence) and expenditures on education have doubled.

Last year India's 360,000,000 inhabitants were reported still using less than 2 lbs. of paper per person per year (in U. S. A. the figure was 381 lbs.).

## Good News from New England

Laurence F. Whittemore, president of Brown Company, said the demand for his company's pulp and paper is running substantially ahead of what it was a few months ago. The long term outlook "is very good," he said.

## IN THIS ISSUE:

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PULP & PAPER circulates all over the world.

It is read in virtually every pulp and paper company office and mill throughout the United States, Canada, Mexico, Alaska, Hawaii, the Philippines, Australia and New Zealand. It is read in many other offices and mills in Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Uruguay, Venezuela, England, Ireland, Scotland, Sweden, Norway, Finland, France, Germany, Austria, Belgium, Holland, Czechoslovakia, Italy, Spain, Switzerland, Soviet Russia, Poland, Yugoslavia, India, Pakistan, Israel, South Africa, China, Japan, Formosa, both near and far around the world, where pulp and paper are made.



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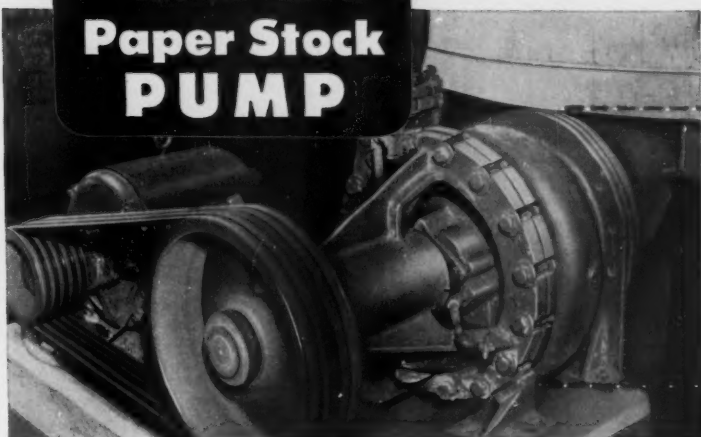
In the "Year of the Two Winters," Paul Bunyan chopped the North Pole down for firewood. Winters have been growing milder ever since.

A reproduction of this incident from the fabulous life of Paul Bunyan—the sixty-seventh of a series—will be sent on request. It will contain no advertising.

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## **Paper Stock PUMP**



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Heavier Stocks  
Without Feeder*

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A-3769

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Research leadership is one of the main reasons why Brown Company pulps are outstanding. Our laboratories are constantly developing new fibres with special characteristics to enable paper manufacturers to take advantage of the versatile characteristics of wood cellulose. They were the first to make it economical and practical to use hardwood fibres in the manufacture of many products.

Brown Company pulps are made principally from its own vast timberlands of northern softwood and hardwood. This assures quality control and a dependable source of raw material.

If you have a paper problem, however difficult it may be, write to our Technical Service Division. Address Dept. CP-11 in our Boston office.

# BROWN



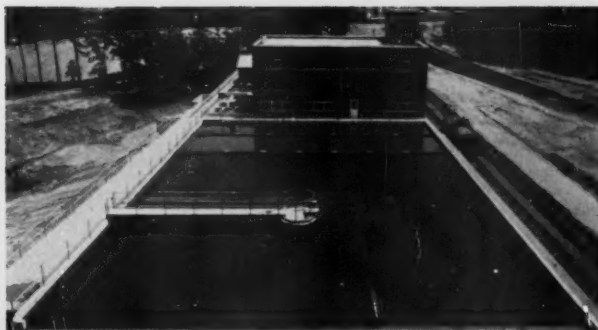
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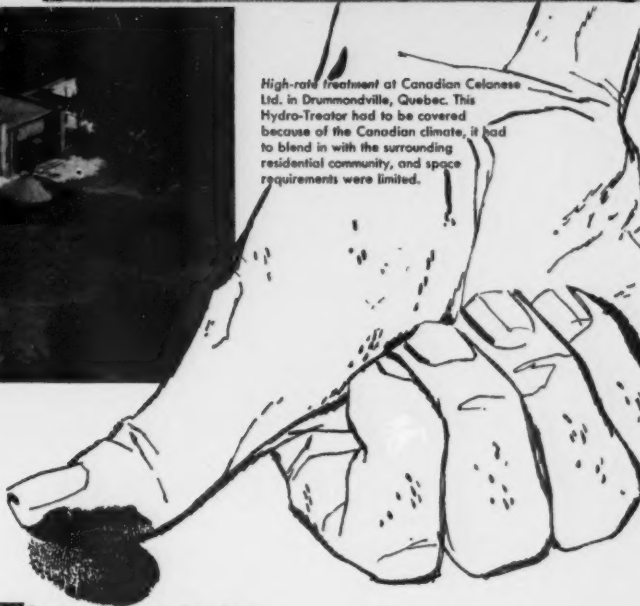
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Conventional treatment at Hollingsworth & Whitney Company's Chickasaw Mills, Mobile, Alabama. Here, adequate space and a warm climate permitted this Company to take advantage of the low chemical consumption and minimum operating requirements of the Flocculator-Squarex Clarifier combination.



High-rate treatment at Canadian Celanese Ltd. in Drummondville, Quebec. This Hydro-Treater had to be covered because of the Canadian climate, it had to blend in with the surrounding residential community, and space requirements were limited.



## Just Like Fingerprints...

**Some water treatment problems look alike — but aren't!**

For instance, take the two Dorr installations shown here. Both are industrial water plants — both have approximately the same capacity — and both are installed primarily for color removal. Yet one uses high-rate treatment with a Dorrco Hydro-Treater, the other conventional treatment with a Dorrco Flocculator and Squarex Clarifier.

Why the difference? In this case all-important local

conditions. And to prove the equipment specified met these conditions . . . both Companies have recently doubled water plant capacity by exactly duplicating their existing units!

For a complete picture of the many types of Dorr water pre-treatment equipment, write for a copy of Bulletin No. 9141. The Dorr Company, Stamford, Connecticut.

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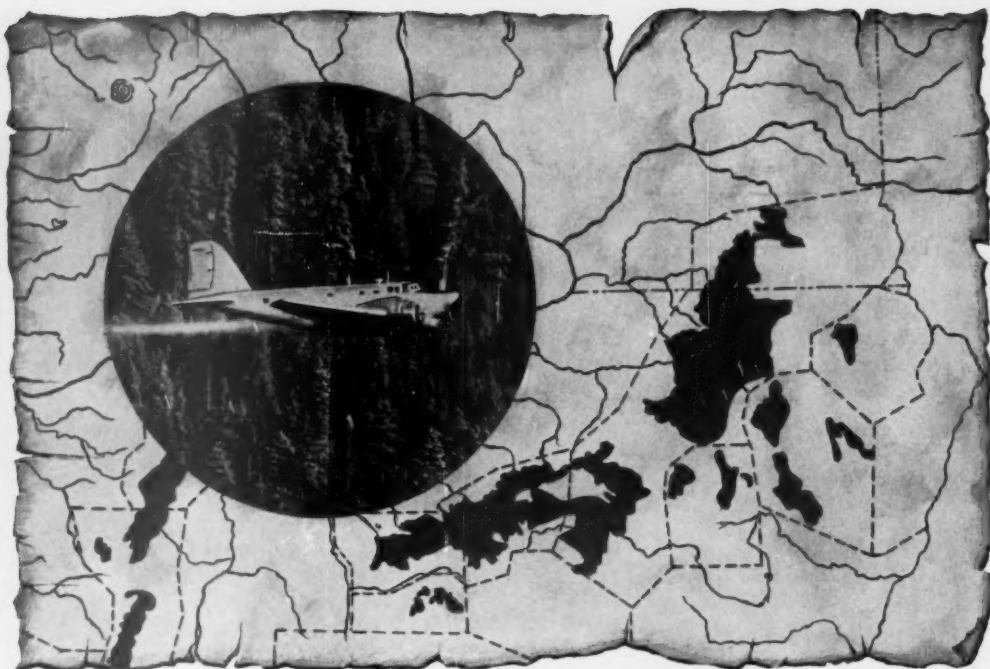


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*Pennsalt reports on the  
Spruce Budworm Control Program:*

Shaded portions of map show treated areas in Washington and Oregon

## **ACTION** is saving our Northwestern timber crop

During the past four years, timber owners have been able to nullify a serious spruce budworm infestation on many of their tree farms in the Northwest. But it took a strong plan of *action* to do the job. Aerial spraying . . . plus a low-cost, Pennsalt-produced insecticide which proved 99% effective . . . held the per-acre cost to slightly more than a dollar. The value of the saved timber comes to at least \$785 per acre!

This one large-scale control program in the states of Oregon and Washington has conserved more than 40 billion board feet of otherwise doomed timber. But, even more significant, it has proved *for the first time* that an extensive outbreak of at least one type of insect enemy of our timber crops—in at least one section

of the country—can be controlled effectively and economically.

No doubt, the same methods will prove equally effective in ridding all our forests of many other types of insects and disease . . . *which annually destroy 30% more timber than forest fires!* Pennsalt technicians will gladly assist on these problems from coast to coast.

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*Timber is a crop . . . let's protect it*

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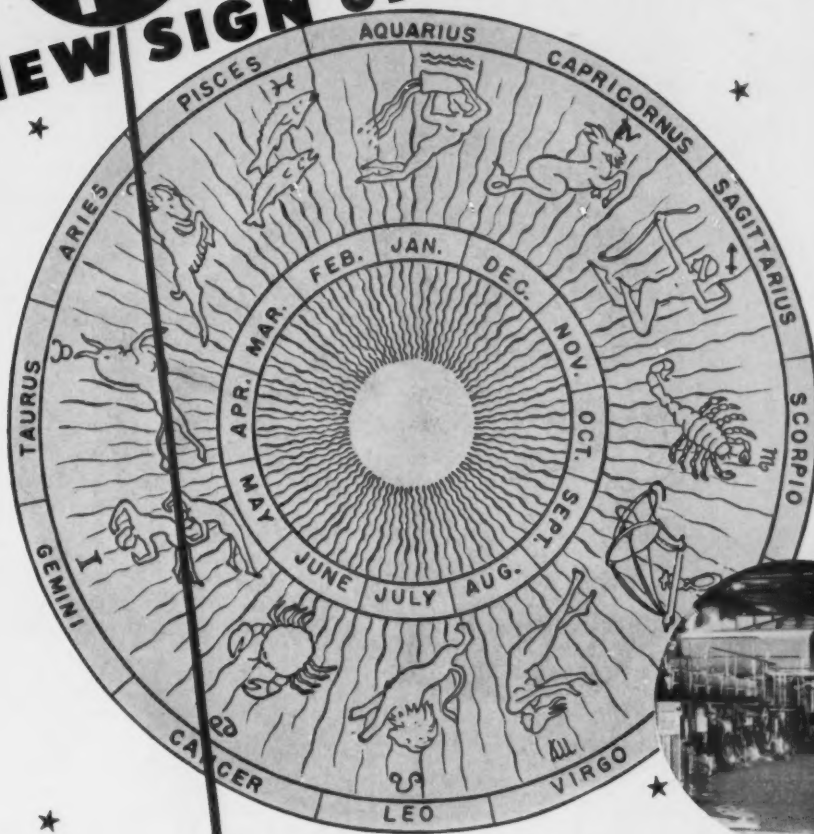


**Pennsalt  
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# a NEW SIGN of the ZODIAC



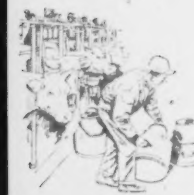
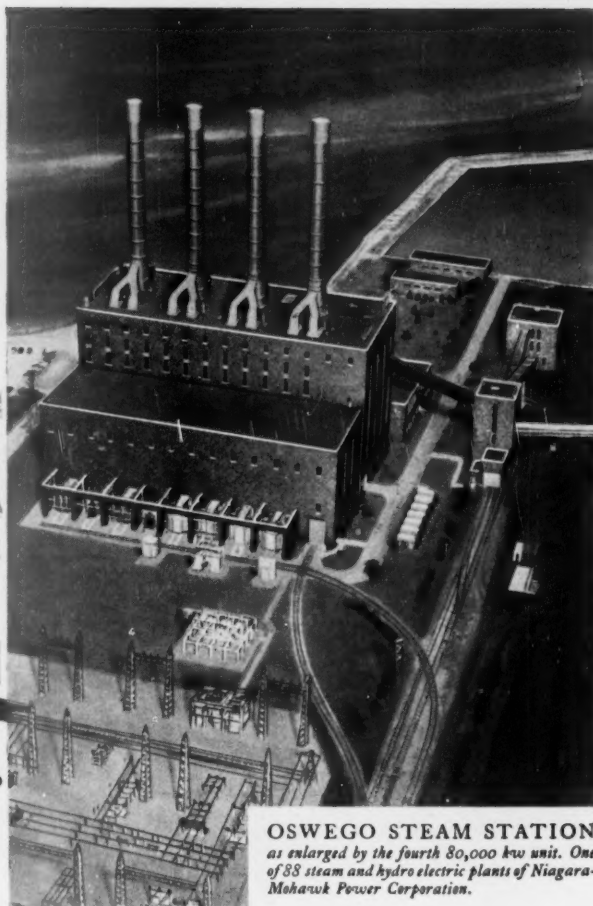
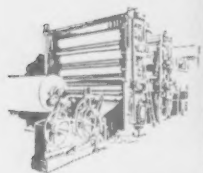
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The benefits of competent business management of a privately-owned utility are again demonstrated by the Niagara-Mohawk system.



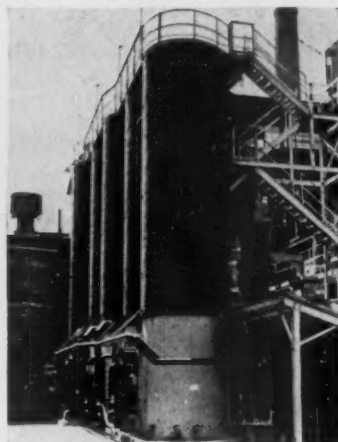
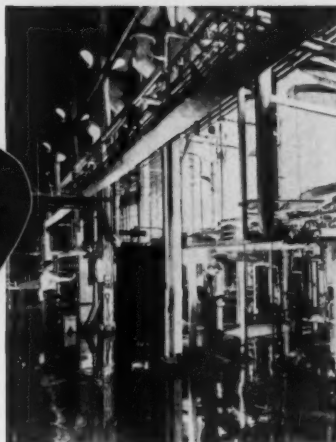
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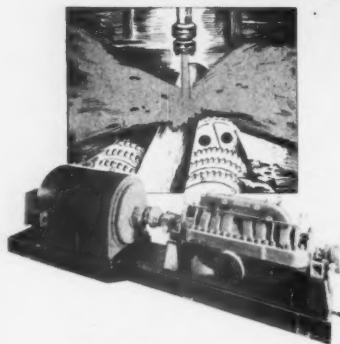
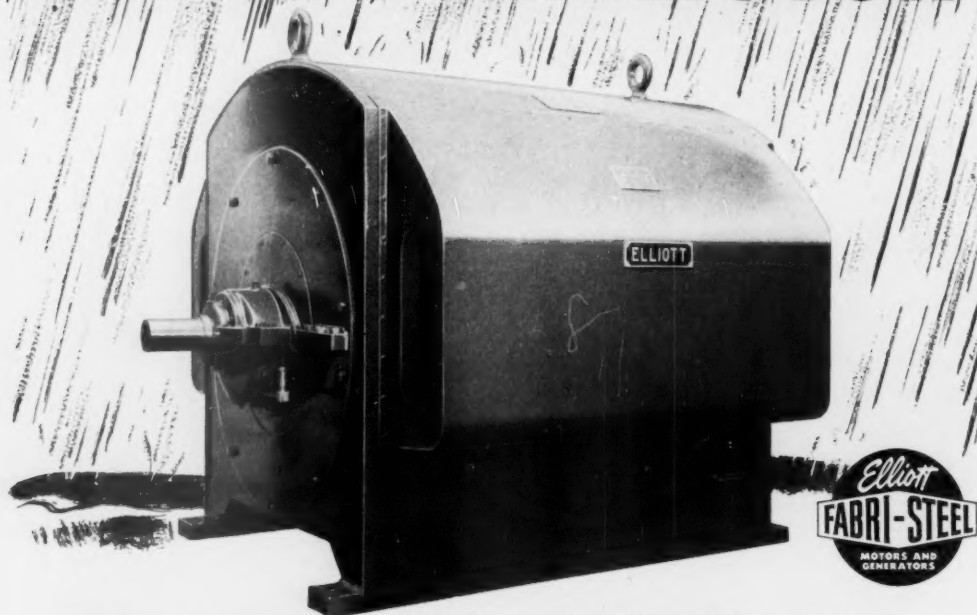
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Sizes from 50 hp up, all enclosures, all types. Write for bulletin on the motor you need.

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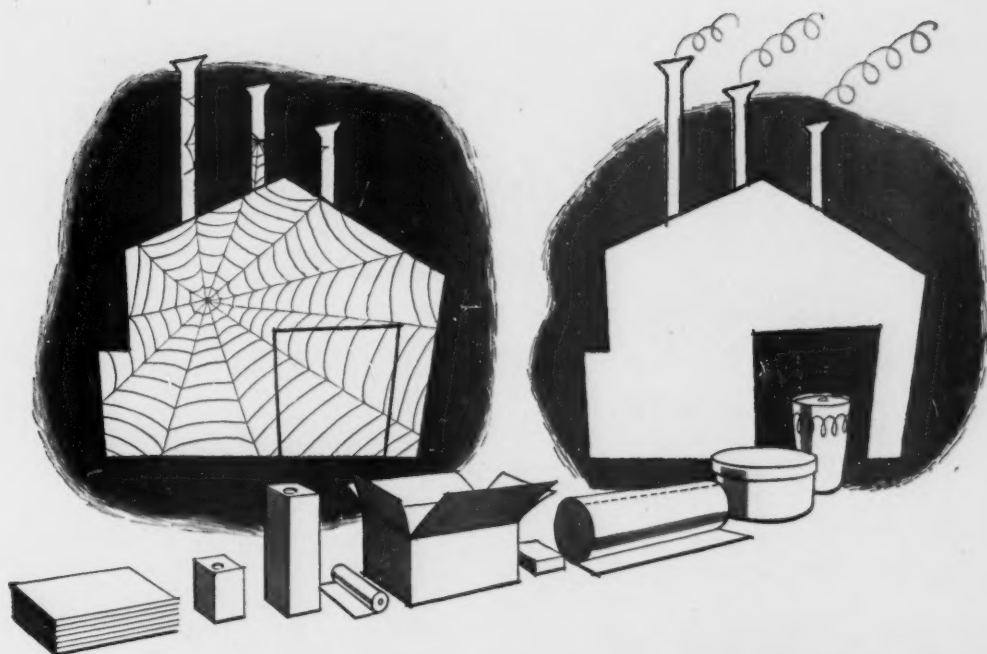
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**ACCOCCEL® 741 Dispersant**, prevents the formation of pitch agglomerates which plug the screens and stick paper to the rolls.

**THE BARDAC PROCESS** permits the addition of large amounts of resinous dispersions to paper and paper board products without white water losses or equipment fouling.

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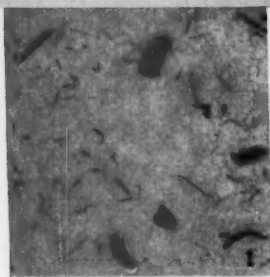


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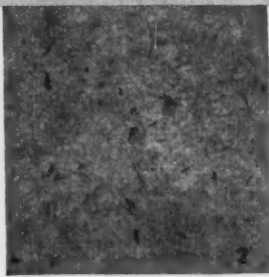
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**Device** that  
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from fine  
screen rejects

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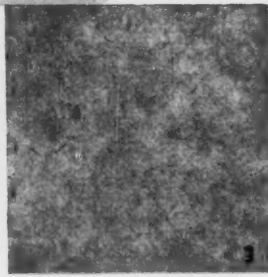
**SEE THE DIFFERENCE...** These unretouched photographs are actual size.



Paper made with fine screen rejects. Note dirt, shives and large fiber bundles.



Paper made with rescreened rejects. Only the largest particles, 8% of the rejects, are removed. Note the large number of shives which passed through the screen.



Paper made with screened, Curled rejects. 99.4% of the fine screen rejects are in this sheet. Note improvement in cleanliness as a result of Curlation.

*Write* for more detailed information. See the results obtained from your own pulp.

Actual mill operation proves Curlation eliminates shives and separates the individual fiber bundles, as well as reducing the sizes of dirt particles. This permits a large portion of the dirt to be removed during washing and thickening operations.

Curlation increases yield by converting shives and fiber bundles into No. 1 pulp. With Curlation you no longer have No. 2 pulp and fine screen rejects. Increased yields of 5% are common in many normal pulps.

Curlation imparts a permanent bend and twist to fibers thereby imparting higher tearing strength to paper made from Curled pulp. Sheet No. 3 has 60% higher tearing strength than sheet No. 2. Curlator patented action rolls fiber and fiber bundles under pressure without reducing fiber length. Curlation does not cut the fibers.

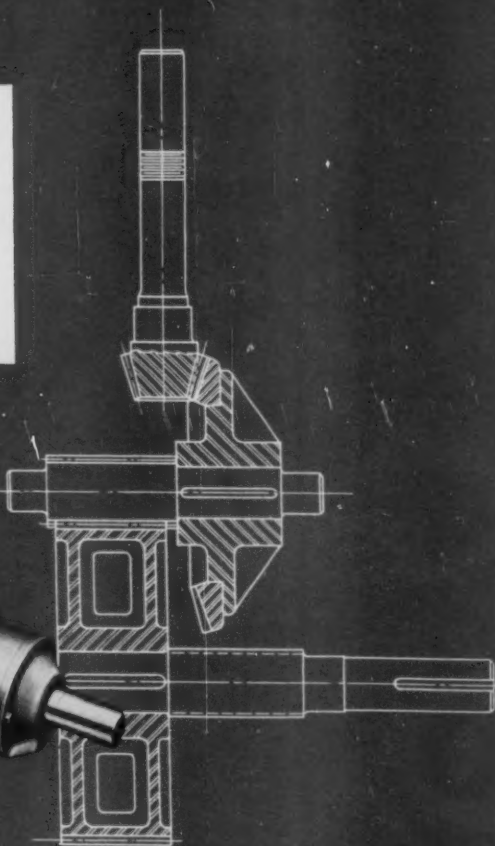
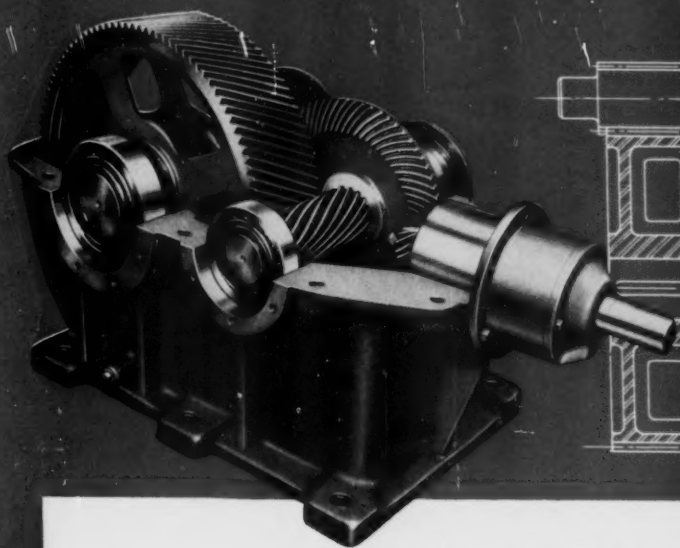


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TO MEET  
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If your problem involves the transmission of mechanical power at right angles, be it vertical, with shaft up or down, or horizontal, there is a Pacific-Western right-angle speed reducer just right for your needs.

During the past *Fifty Years*, applications in virtually every industry have constantly broadened our standard line of units, plus giving us the know-how to assist you in selecting and applying the correct unit for the job to be done.

Our complete line of right-angle reducer units means that your needs will be met quickly and economically. Consult our nearest plant or representative for further information. If desired, a skilled Pacific-Western application engineer will call at your request.

5230

Plants • 417 Ninth Ave. S., Seattle 4, Wash.  
1000 S. Imperial Highway, Lynwood (Los Angeles County), California  
1033 Fulton St., San Francisco 3, Calif.  
Belmont (San Francisco Peninsula), California  
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Manufacturers of PACIFIC-WESTERN Gear Products

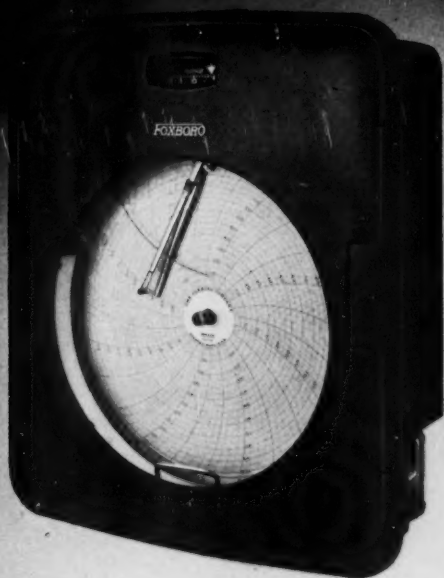
**Pacific Gear & Tool Works**

Plants: Seattle  
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better measurement and control of

# TEMPERATURE

-350°F to +2800°F



Throughout the vast field of industrial temperature instrumentation, Foxboro will be found in the greatest number of installations where complete reliability and most economical fulfillment of optimum accuracy are vital. If your process requires temperature measurement or control in any range between -350°F. and +2800°F., the high engineering standards and complete diversity of Foxboro Instruments . . . backed by Foxboro's unequalled application experience . . . offer you the way to obtain it most effectively.

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*electric, electronic and pressure-filled thermal systems*

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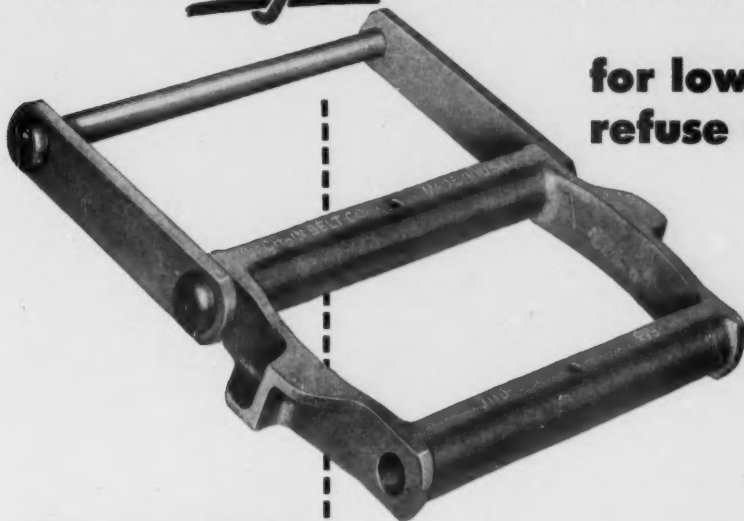
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For over 40 years, specialists in the measurement and control of temperature, pressure, flow, liquid level, humidity . . .

THE FOXBORO COMPANY • FOXBORO, MASSACHUSETTS, U.S.A.

# *The Right Combination*

**for low-cost  
refuse conveying**



Side view, notice the heavy wearing shoes on the edges of the side bars of the invertible block link; and the shoe reinforcement, or rib, which also serves to move material. Barrels contain large grease chamber. There is added metal behind the rivet which lengthens chain life.

For a better job of conveying sawdust, refuse, wood chips and similar material, Rex® has developed the new Combination-Type Mill Conveyor Chain No. 6110. It is the ultimate in H-type conveyor chain... far superior to the ordinary H-type chain which it is designed to replace.

Block links of malleable iron or Rex Z-Metal, and side bars of high carbon steel give this chain the toughness to stand up under long, hard, continuous service. Rivets are specially made to reduce possibility of breakage resulting from momentary overload and corrosion fatigue.

Here's a chain that is sure to slash overall refuse handling costs. It can be run over the same sprockets as ordinary H-type chain. Your Rex Field Sales Engineer is anxious to give you the complete story. Call him today, or if you prefer, write to Chain Belt Company, 4691 W. Greenfield Ave., Milwaukee 1, Wis.

## OTHER POPULAR REX MILL EQUIPMENT



Rex H-Type Drive Chain



Rex Chabotco® Chain



Rex Wood Chip Idlers



Baldwin-Rex® Roller Chain



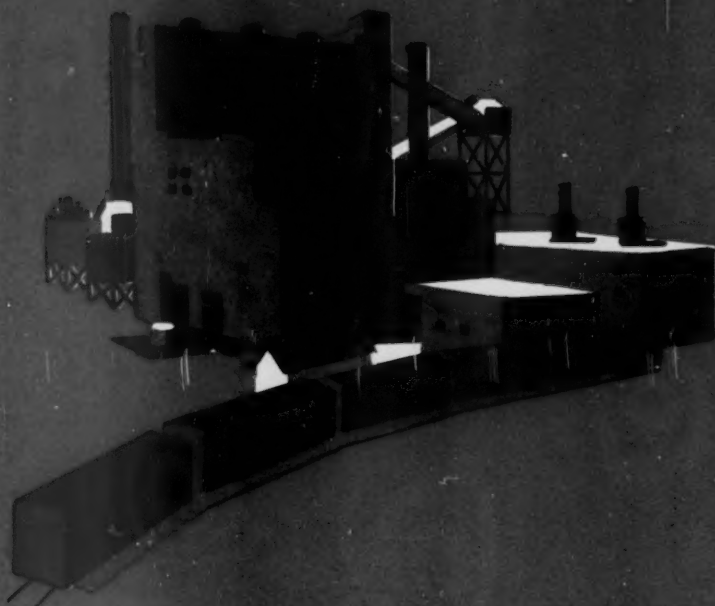
Rex Tamperim® Sprockets



## **Chain Belt** COMPANY OF MILWAUKEE

Atlanta • Birmingham • Boston • Buffalo • Chicago • Cincinnati • Cleveland  
Dallas • Denver • Detroit • El Paso • Houston • Indianapolis • Jacksonville  
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*Distributors in all principal cities in the United States and abroad*



## **OUTSTANDING WESTERN SOURCE**

Puget Sound Pulp and Timber Company is a large  
producer of bleached sulphite wood pulp, with a daily  
capacity of three hundred and seventy-five  
tons of this product.

# **PUGET SOUND**

**PULP AND TIMBER COMPANY**

**BELLINGHAM • WASHINGTON**





## COLOR gives you a hold on your market!

It makes sense to sell a store executive on the advantages of colored wrappings, boxes, bags and gummed tape.

And once you've sold him, it'll be easy to hold him! He'll know that you have developed a distinctive color theme for his store . . . and that you have developed an *extra* merchandising tool for his store.

So go after this big potential market for colored paper. Turn to Du Pont's technical-service experts for help on any specific coloring problem. They will help you to give stores a truly distinctive package color that they'll want to keep using year after year—packaging they'll buy from *you* consistently!

For details, write E. I. du Pont de Nemours & Co. (Inc.), Dyes and Chemicals Division, Wilmington 98, Delaware.

**More color makes more business  
... for your customers and you**

November 1952

**FOR MAXIMUM ECONOMY**  
Du Pont basic dyes

**FOR MAXIMUM SOLUBILITY**  
Du Pont acid dyes

**FOR MAXIMUM LIGHT  
FASTNESS**

*Du Pont dispersed organic pigments:*

**Monastral\* Fast Blues**

**Monastral\* Fast Greens**

**Lithosol\* Pigments**

\*REG. U. S. PAT. OFF.

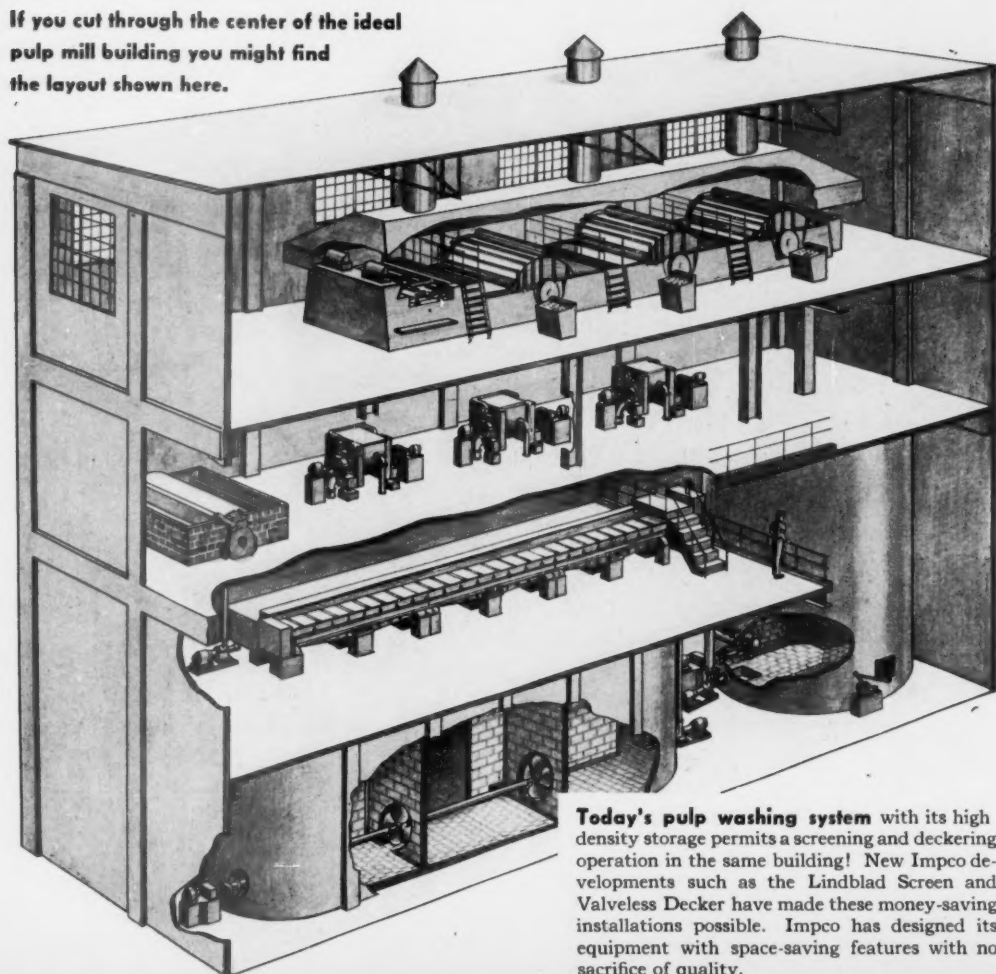


**150th Anniversary**

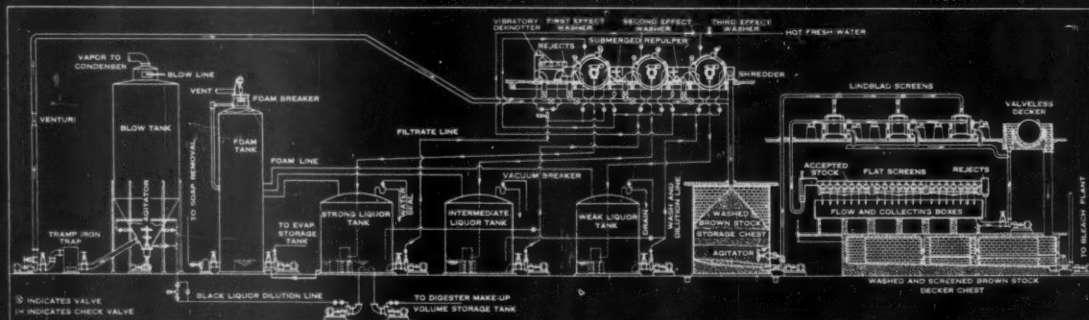
BETTER THINGS FOR BETTER LIVING...THROUGH CHEMISTRY

# IMPCO Now Makes Possible a

If you cut through the center of the ideal pulp mill building you might find the layout shown here.



Today's pulp washing system with its high density storage permits a screening and deckering operation in the same building! New Impco developments such as the Lindblad Screen and Valveless Decker have made these money-saving installations possible. Impco has designed its equipment with space-saving features with no sacrifice of quality.

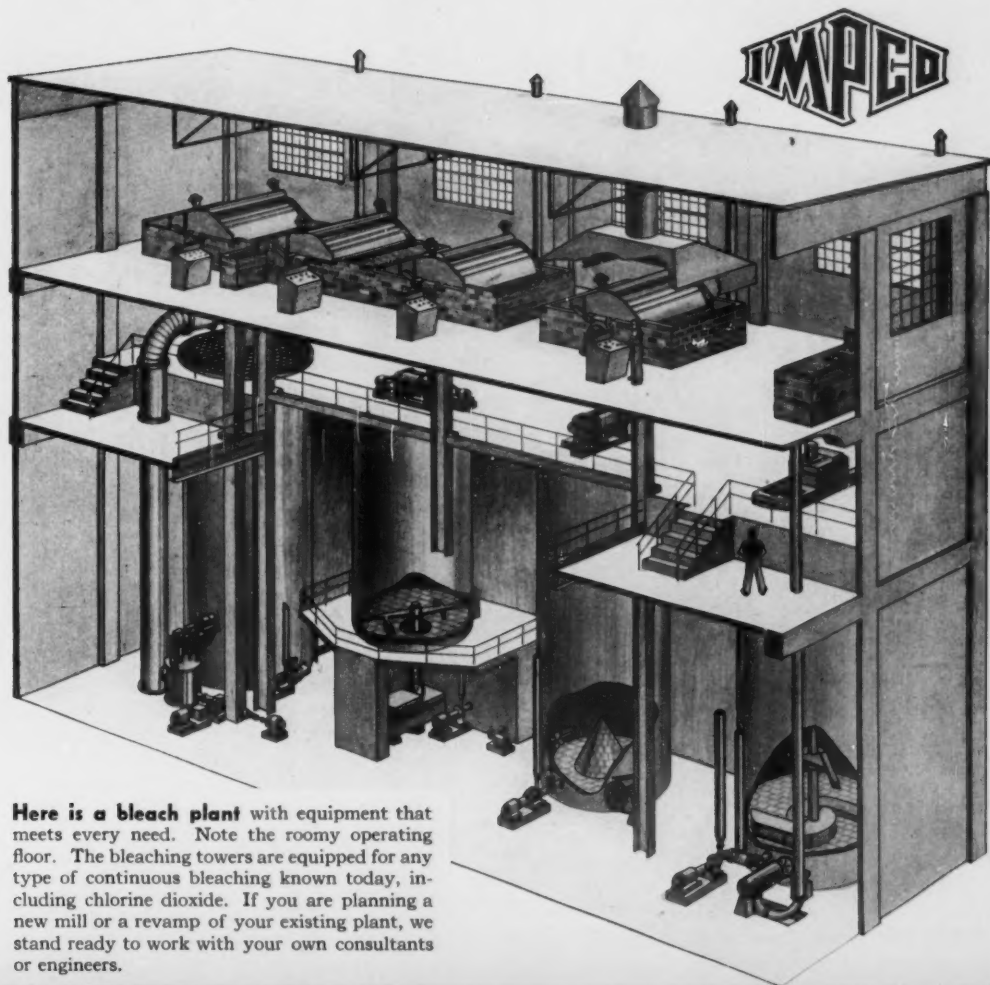


## IMPROVED PAPER MACHINERY

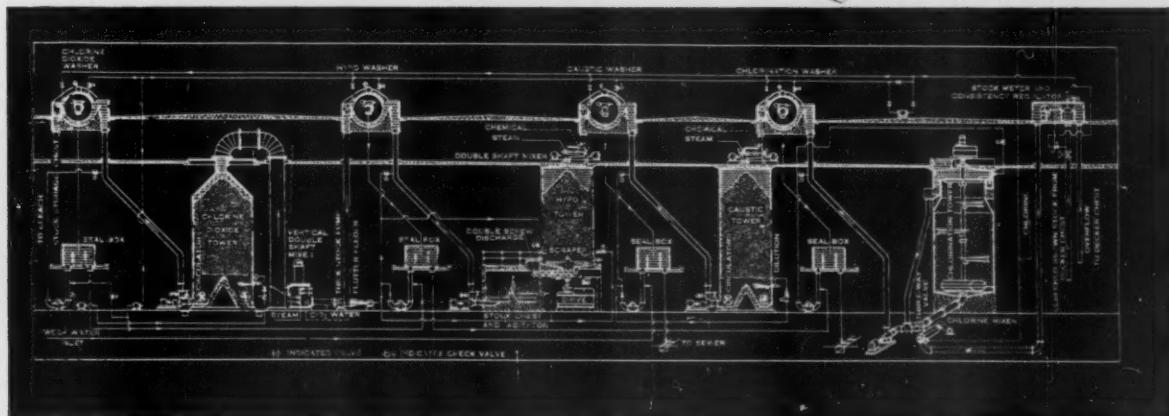
Sherbrooke Machineries Limited



# Compact Integrated Pulp Mill



Here is a bleach plant with equipment that meets every need. Note the roomy operating floor. The bleaching towers are equipped for any type of continuous bleaching known today, including chlorine dioxide. If you are planning a new mill or a revamp of your existing plant, we stand ready to work with your own consultants or engineers.



## CORP.—Nashua, New Hampshire

manufacture similar equipment in Canada.

**LESS DOWNTIME . .**

**MORE PAPER**

with

**ADAMS**

**AUTOMATICALLY FILTERED WATER**



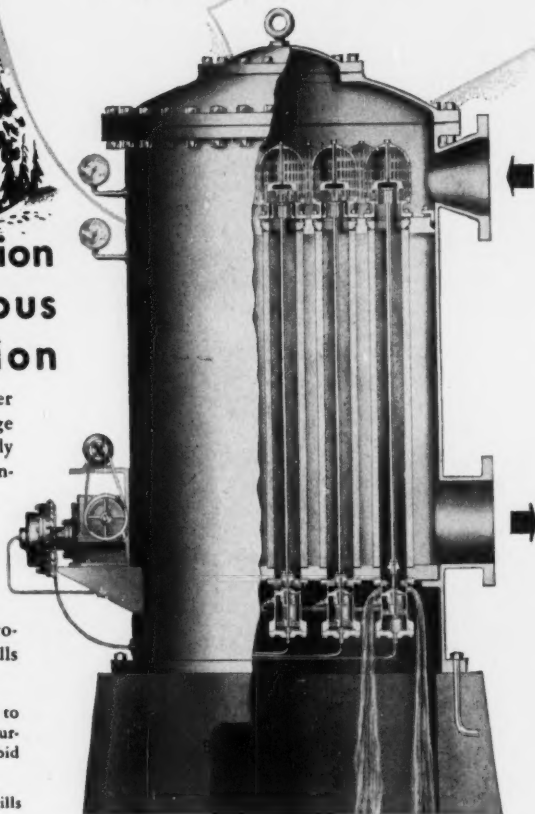
**Continuous protection  
for your continuous  
machine operation**

Higher production goals of today's faster machines must be protected—continuously. Large volumes of water, carrying proportionately larger amounts of impurities, need more attention than ever before.

Clean, automatically filtered water can eliminate down time due to plugged shower nozzles, helps avoid mid-week shutdowns for washing clogged felts.

Experience with Adams Poro-Screen and Poro-Stone Water Filters in pulp and paper mills from coast to coast has proved:

- 1** Continuous filtration can be relied upon to remove all objectionable impurities, even during seasonal conditions of highly turbid supply.
- 2** Production continues in Adams-equipped mills when others using the same water source are shut down for cleaning.



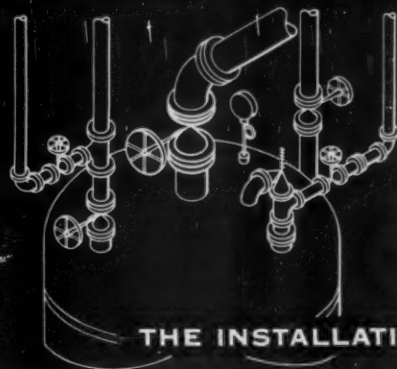
*Write for your copy of the new 20 page booklet on water filtration in the Pulp and Paper Industry, Bulletin No. 691.*

**R. P. ADAMS COMPANY, INC.**

**210 EAST PARK DRIVE, BUFFALO 17, N. Y.**

# Are You Getting this Low-Cost Alloy Valve Service?

...on Starch Converters,  
for instance



THE INSTALLATION

Crane Ni-Resist valves on starch inlet lines to converters, Corn Products Refining Co. plant, Argo, Ill.

## THE HISTORY

Valves in this service are constantly exposed to hydrochloric acid vapors under working pressure of 50 psi at approximately 280 deg. F. None of the valves formerly used lasted more than 2 to 3 weeks without repairs. In 3 to 4 months they had to be retired from service for rebuilding. Maintenance costs were excessively high.

To stop the trouble, the plant chose Crane Ni-Resist Alloy Cast Iron Gate Valves with Crane 18-8 Mo trim. Since being installed, these valves have operated at highest efficiency. On last inspection after 19 months' uninterrupted service, they were still in excellent condition.

The Complete Crane Line Meets All Valve Needs. That's Why

More Crane Valves Are Used Than Any Other Make!

## CRANE VALVES

CRANE CO., General Offices: 836 S. Michigan Ave., Chicago 5, Illinois  
Branches and Wholesalers Serving All Industrial Areas

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

November 1952

## VALVE SERVICE RATINGS

### CORROSION-RESISTANCE:

*Ni-Resist OK-18-8 Mo trim ideal*

### SUITABILITY:

*Good for this mildly corrosive service*

### MAINTENANCE COST:

*None—except routine stuffing box*

### SERVICE LIFE:

*5 times longer to-date than other valves*

### OPERATING RESULTS:

*Much less process interruption*

### PRICE:

*In line*

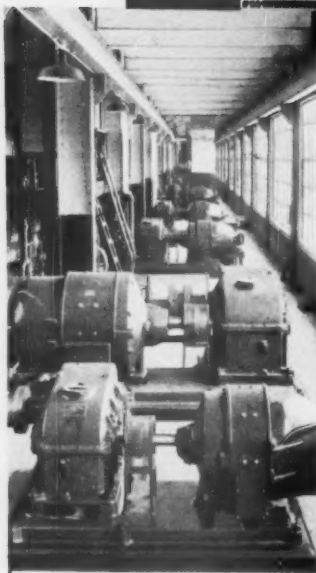
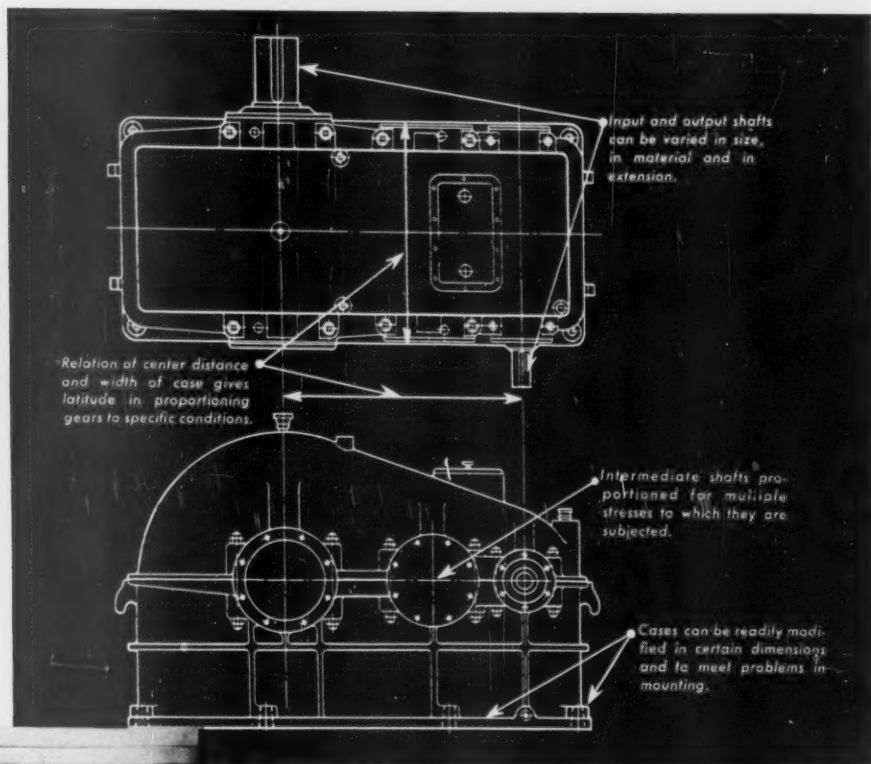
### AVAILABILITY:

*Regular Crane Catalog item*

## THE VALVE

Crane Ni-Resist Cast Iron Gate Valves combine, at moderate cost, the physical properties of quality cast iron with substantially greater resistance to corrosion, erosion, and wear. With 18-8 Mo Alloy trim, they step up valve efficiency on many chemical process services where common cast iron is inadequate. For recommendations, see your Crane Catalog, or call your Crane Representative.





There are 80 Farrel speed reducers in this southern kraft-paper mill.

## This IDEA can add years of life to your paper machine drives, too!

When speed reducers are *designed for the job*, they are likely to perform better and last longer than the usual "standardized" drive. Each unit fits its application . . . without compromise . . . whether it is used in driving a suction press, smoothing press, dryer, couch, calender, reel, or other machine.

That is why Farrel® speed reducers give such a good account of themselves on paper machine drives. They are standard only in their principal features; adaptable in critical detail, as the above blueprint shows. This idea of design flexibility has resulted in the solution of innumerable application problems.

*Write for further details of these problem-solving units. Ask for a copy of Bulletin 449.*

**FARREL-BIRMINGHAM COMPANY, INC., ANSONIA, CONN.**

*Plants: Ansonia and Derby, Conn., Buffalo, N. Y.*

*Sales Offices: Ansonia, Buffalo, New York, Boston, Pittsburgh, Akron, Detroit, Chicago, Memphis, Minneapolis, Portland (Oregon), Los Angeles, Salt Lake City, Tulsa, Houston, New Orleans*

# Farrel-Birmingham®





## ***...not a Jack-of-All-Trades...just MASTER of ONE***

The proverbial handy man never reached big league stature in any of his jobs. And no single material is master of all corrosion problems found in your pulp mill.

That is why ESCO casts not only the commonly used or "standard" stainless steels, but also works in special analyses required to fit specific operating conditions. Thus, the following analyses have been used in manufacturing equipment for pulp mills throughout the country:

**ESCO ALLOY 20** for cooler piping after sulfur burner.

**ESCO ALLOY 32 (T410)** for pulp grinder and pump parts where hardness is desirable.

**ESCO ALLOY 40 (T304)** for digester strainer screens and circulating systems for kraft mills (alkaline base liquors).

**ESCO ALLOY 45 (T317)** for digester circulating systems for sulfite mills (acid base liquors).

Perhaps somewhere in your plant there is a trouble zone where corrosion has been excessive, and where ESCO metallurgical experience and special stainless steels can provide a workable solution.

ESCO welcomes your consultation. See your nearest ESCO representative, or write full particulars of your problem including the corrosive agents used, their concentrations, temperatures, pressures, etc. The ESCO catalog of stainless and high alloy steels outlines our facilities and services. Fill in and mail the coupon, and you will receive a copy promptly.

**ESCO** STAINLESS AND  
HIGH ALLOY STEELS

### **ELECTRIC STEEL FOUNDRY**

2166 N. W. 25th Avenue, Portland 10, Oregon

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IN CANADA — **ESCO** LIMITED, VANCOUVER and TORONTO

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#### **ELECTRIC STEEL FOUNDRY**

2166 N. W. 25th Avenue, Portland 10, Oregon

Please send your catalog on Stainless and High Alloy Steels to

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Company

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City

Zone  State

**"You've never seen  
ANYTHING  
like it before" . . . . .**



**. . . nor like the  
BALDWIN PRESSES  
that made it!**

There's a brand new feature in the large Baldwin presses used to produce spectacular "Novoply"—the use of superheated water to transmit 70,000 Btu an hour to the wood. It's this intense heat—plus other features of these powerful Baldwin presses—that locks fast the unusual characteristics designed into the wood mass by U. S. Plywood's wood chemists.

These unusual presses are further evidence of Baldwin's ability to produce designs that keep step with the needs of pioneering manufacturers of hardboard and laminated wood panels—frequently to anticipate their needs

well in advance of new developments. Which explains why producers throughout the country lean so heavily on Baldwin for special and standard presses for their production lines.

So if you want to improve quality, speed production, cut rejects on present board products—or are considering the development of new types of board materials—be sure to get the help of your nearest Baldwin representative.

The wood mass is first prepressed on 775 and 350-ton Baldwin presses. Then finished on 16-opening, 1820 and 873-ton Baldwin presses using superheated water.

Write today



for Bulletin 268

**BALDWIN**

EDDYSTONE DIVISION • BALDWIN-LIMA-HAMILTON CORP.





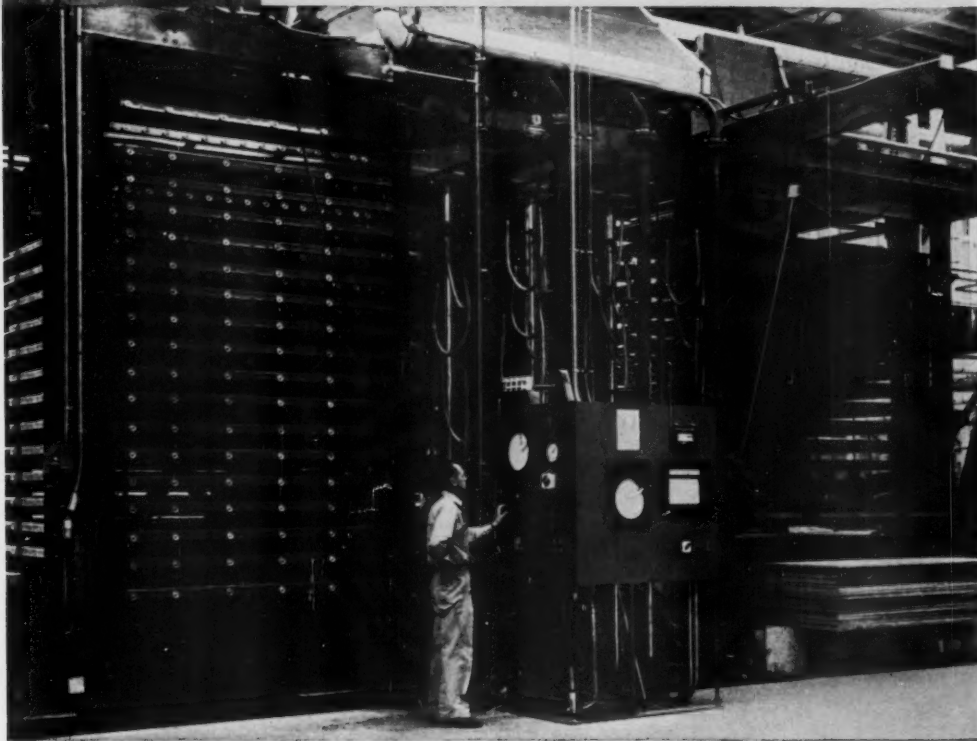
# ... novoply\*

"A new material . . . with properties superior to those of any wood product yet developed . . .

" . . . It's spectacularly beautiful ! . . . The flattest wood paneling ever produced—virtually warp-free. Light. Strong. Dimensionally stable. Easily fabricated with ordinary wood-working tools. Has excellent nail and screw holding properties . . . good insulating and sound-reduction qualities."

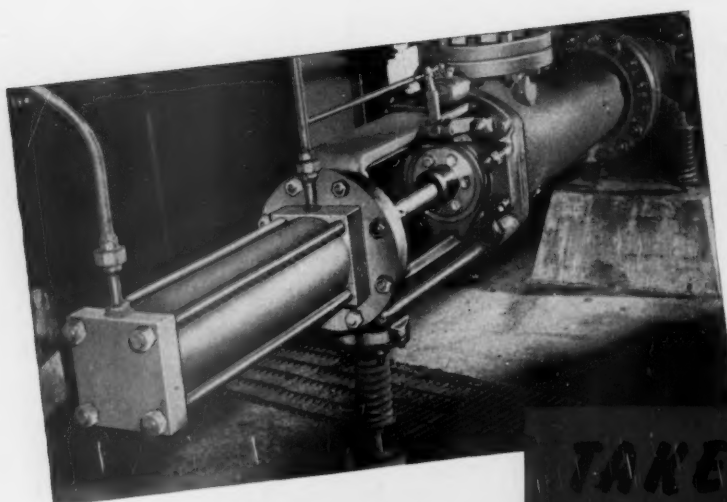
*That's what U. S. Plywood says about Novoply*

\*T. M. Reg.  
Patented; other patents pending



## **- LIMA - HAMILTON**

PHILADELPHIA 42, PA. • OFFICES IN PRINCIPAL CITIES



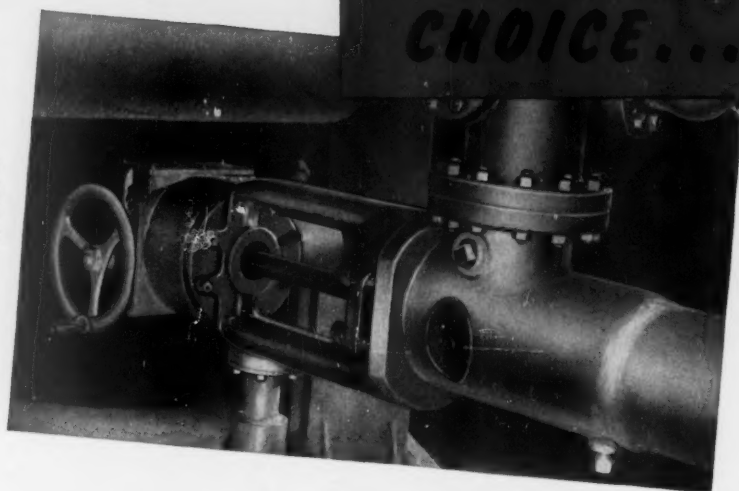
### HYDRAULIC- OPERATED

Yarway Digester  
Blow Valve—one  
of six installed at  
large North Caro-  
lina paper mill.

**TAKE YOUR  
CHOICE...**

### MOTOR- OPERATED

Yarway Digester  
Blow Valve—one  
of eight installed  
at large Canadian  
paper mill.



You can choose between hydraulic-operation and motor-operation when you specify Yarway Digester Blow Valves. Both combine all the following Yarway advantages:

- ▶ Remote control, usually from above, on the operating floor.
- ▶ Tight shut-off. Effective sealing under full digester pressure. Saves cooking liquor. Insures thorough pulp cooking.
- ▶ Free discharge. No pockets. Full discharge with minimum pressure drop. Digester blows clean.

- ▶ Rugged construction. Built to withstand shock and wear of toughest service.

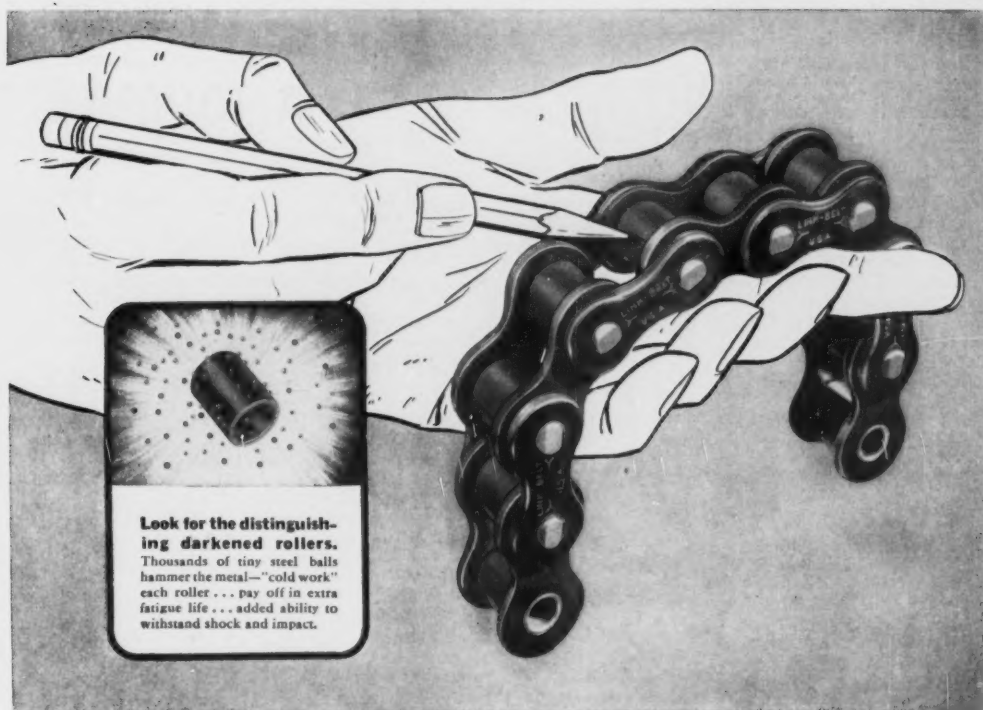
- ▶ Modern metallurgy—such as sliding plunger of hardened stainless steel and sleeve of chromium nickel—resists wear and chemical action.

For full details, write for Yarway Bulletin B-440.

**YARNALL-WARING COMPANY**  
103 Mermaid Avenue • Philadelphia 18, Pa.  
*Branch Offices in Principal Cities*



## DIGESTER BLOW VALVES



## It's the **SHOT-PEENED** rollers that give your roller chain extra life!

... one of the extra-wear features you get with every **LINK-BELT** Roller Chain

**P**OWER-TRANSMISSION engineers and metallurgists agree—shot-peened rollers mean longer roller chain life. That's just one of the engineering extras you get with Link-Belt Precision Steel Roller Chain. Another is Link-Belt's exclusive lock-type bushing.

Remember, too, Link-Belt's rigid material selection and controlled heat treating assure chain uniformity ... no weak members.

Link-Belt builds a complete line of roller chain—single or multiple widths in  $\frac{3}{8}$ " through 3" pitch; and double pitch, 1" through 3". Submit your chain problems to the Link-Belt office near you.



No partial bearing here  
—bushing fits securely

### Lock-type bushings increase ability to withstand severe operating conditions

A special manufacturing process securely locks the inside sidebars on the bushing, preventing lateral movement of the sidebars and eliminating a common cause of stiff chains. This Link-Belt development is applied on roller chains through 1" pitch and double pitch roller chains through 2" pitch.

## **LINK-BELT** Precision Steel Roller Chain

**LINK-BELT COMPANY:** Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa), Sydney (Australia). Offices, Factory Branch Stores and Distributors in Principal Cities.

# 1,100-MILE MILLS TOUR

## WHAT'S DOING IN N. Y., VT. AND QUEBEC

An innocent little trip to the annual Fall Meeting of the New York-Canadian Superintendent's Division convention at Saranac Lake this fall ended up in a 1,100 mile tour of pulp and paper mills of New York, Canada and Vermont by a congenial foursome including a PULP & PAPER associate editor. Incidentally Gordon Singletary, Manager at Brunswick and National president of the Superintendents was there. The trip actually had been long planned, but the company can be blamed, happily, on the golf.

Here is some of the news we picked up along the way—But first a couple of newsy notes gathered right at Saranac:

**KEN YOUNGCHILD**, who has headed the technical department for paper chemicals at American Cyanamid, was preparing to leave for Mobile where he will manage the Southern Region in a new sales set-up just created by his company. In this set-up, **JOHN WALSH** will head the paper chemicals department for American Cyanamid out of New York; Ken will take care of the South; **GEORGE E. FROMM** will manage the Western region from Chicago; **A. C. BATE** out of Boston will handle the Eastern region; and **RALPH KUMLER** is the manager of the technical side of the department.

**LESTER (Lefty) SMITH** has become manager at the Harrisville, N.Y., plant of St. Regis Paper Co., under the general supervision of **D. A. MORAN**, New York State resident manager of the company's printing paper division. Les had been for a number of years production manager of the Gould Paper Co. mill at Lyons Falls, N.Y., where he has been succeeded by his former assistant, **JOHN BRUSH**. The former manager at Harrisville, **SHERMAN VALENTINE**, has, in the meantime, been delegated to undertake special survey and project work for St. Regis in connection with New York state wood supply where his wide acquaintance in northern New York can be of great advantage in the long range planning of his company.

**PAT MORAN** who manages the St. Regis printing paper division out of Deferiet, N.Y., reported that the latest installation there is a new head box with Valley slice and a Ross hood has been added to No. 2 machine.

Following the trail from Saranac:

**RACQUETTE RIVER PAPER CO.**, Potsdam, N.Y. As you enter the road leading to the plant there is a sign which says: "In continuous operation since 1892." At the plant we were greeted by **George W. Sisson 3rd**, a descendant of the founders of Racquette River, whose family still owns and manages the mill. Also at the plant were **M. W. HEDDEN**, beloved veteran of the industry and chemical superintendent at Racquette River, and **A. H. CARROLL**, paper mill superintendent. We also



### PULP & PAPER VISITS UPPER NEW YORK STATE

met **A. O. WOOD**, sulfite superintendent, who has been handling this part of the operation since coming over from Mersey Paper Co., Liverpool, Ont., about a year ago. A major change here has to do with the Chemipulp K.C. digester system with Brown electronic panel board.

**DIAMOND MATCH CO.**, Ogdensburg, N.Y. **D. A. HUNTER** is resident manager, and **JACK C. BENNY**, technical director. Mr. Hunter had a fine auto trip this summer with his wife, daughter, and son, Dard, during which they visited the Southwest, and the West Coast up to Washington. Along the way he saw **J. O. JULSON**, former Diamond man now manager of Weyerhaeuser's mill at Springfield, Ore., and **RAY E. BAKER**, another former Diamond man also with Weyerhaeuser and manager at Longview, Wash.

**ST. REGIS PAPER CO.**, Waddington, N.Y. In the feature story in this issue on the St. Regis mill at Deferiet, mention is made of the Waddington receiving port. Through this port on the St. Lawrence, St. Regis receives approximately 50,000 cords of pulpwood a year by river boat from

Canada destined for its New York mills. **JAMES PEMBERTON**, a 35-year veteran for St. Regis, is in charge. The pulpwood is slung in special cable strands on the boats, removed by crane, loaded by rail car, and hauled to Deferiet where the wood is handled from the cars and in the yard still in the slings.

**HOWARD SMITH PAPER CO.**, Corn-



AIR VIEW of Racquette River Paper Co., Potsdam, N.Y., which has been operated continuously since 1892 and which is one of the few remaining family-owned and managed companies in the industry.



wall, Ont. At this progressive firm on the St. Lawrence, Howard Smith has probably done as much as any other company in the industry toward making complete utilization of wood, and the by-products from pulp manufacture. Notable is their manufacture of vanillin from sulfite and lignin from soda liquors. Their work is still progressing along these lines. Howard Smith is one company, too, that knows how to take care of visitors. A package of high quality writing papers, a map of the mill and the area, and flow sheets of the pulp and paper processes are all part of the official handout which makes for good public relations. C. N. Candee, assistant manager, said the capital expenditures program is now practically complete. This included a new paper machine, enlargement of soda plant, bleach plant, boiler house, etc.

**MISSISQUOI CORP.**, Sheldon Springs, Vt. This is the hideout of A. E. HACHMANN, general manager, whose work with TAPPI and the Superintendents takes him all around the country. Missisquoi, through its wholly-owned subsidiary, Fonda Container Co., at St. Albans, Vt., recently exhibited its products at the Eastern States Exposition at Springfield, Mass.—being the only paper company represented at the big annual affair. New equipment at Fonda has greatly improved the already fine position of the company in the manufacture of food containers and paper plates. Most of the board for this production comes, of course, from the mill at Sheldon Springs. T. C. ECCLESINE is general manager at Fonda, and DOUGLAS BENOITE is in charge of expanded printing and coating operations.

**DIAMOND MATCH CO.**, Plattsburg, N.Y. A good contingent from Plattsburg was at Saranac and it was like old-home-week, after long travels, to see some of them again. DR. J. E. FOOTE, manager for the New York mills, S. H. GRIMNES, chief engineer, H. F. JACQUES, chief chemist, and FRANCIS DENNIS, paper mill superintendent, were there.

**IMPERIAL PAPER & COLOR CORP.**, Plattsburg, N.Y. Big news here is the beginning of their manufacture of "Precision-Trimmed at the Factory and Packaged Washable Wallpapers," announced by WM. MURPHY, resident manager. Imperial is the only company in its field to have fully integrated operation of groundwood, paper and wallpaper converting. Although not the first to enter the "trimmed" wallpaper market, Imperial with its new equipment for handling and its good packaging is expected to make an impact. Mr. Murphy was a guest for his vacation this summer at Buckingham, Quebec, of HENRY CRESSEY, general manager of McLain Pulp and Paper Co. there. T. F. LA HAISE is superintendent at Imperial.

**J. & J. ROGERS**, Au Sable Forks, N.Y. JOHN R. ROGERS, paper mill superintendent and a grandson of the founder of



(l to r) RUSSELL E. GREY, general manager of Gotham Paper Mills, and first vice-chairman of the New York-Canadian superintendents division; CARL E. REYNOLDS, Armstrong Cork Co., who completed a successful year as chairman of the New York-Canadian superintendents with the Saranac meeting; JOHN R. ROGERS, paper mill superintendent at J. & J. Rogers, Au Sable Forks, N.Y. He is a grandson of the founder of this company which was established in 1892 and the origins of which date back to the J. J. Rogers Iron Co. established in 1825.

the company in 1892, says his company should be credited with many "firsts" in the industry. Originally founded as an iron company in 1825 and converted to pulp manufacture in 1892, Mr. Rogers says his company was the first to use native sulfur in pulp production; the first to use a suction couch; and the first to make milk container board. Recent changes at the plant include a rebuilt cylinder machine—going from 4 to 7 cylinders—and 14 new dryers, to give greater flexibility in manufacture of telephone cover stock and other boards. John Rogers' father is Henry Rogers, his brother is James G.—both officers of the company—and his grandfather was J. J. Rogers, who started the plant.

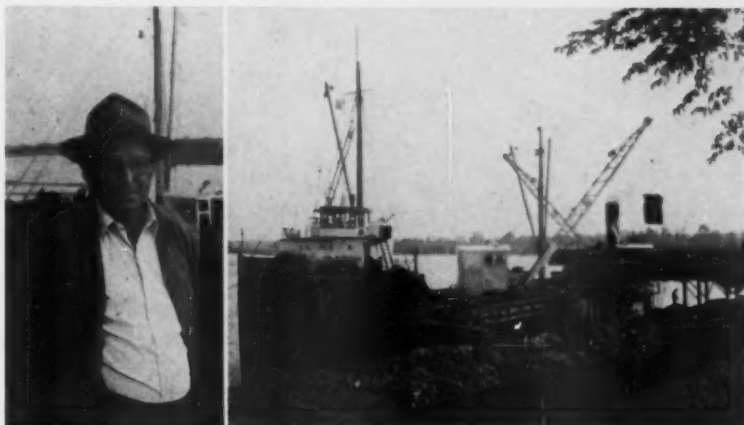
**NEW YORK & PENNSYLVANIA CO., INC.**, Willsboro, N.Y. Here, where W. H. HOWELL is resident manager, is one of the oldest plants of this area, and yet a modern one. Mr. Howell has been associated with the company himself since 1901. So there is little of the story he doesn't know. This Willsboro mill was started in 1882 as the Champlain Fibre Co. by COL. A. G. PAINE, grandfather of the present president of N.Y. & Penn. PETER S. PAINE. When he reaches back into the record book of his mind, Mr. Howell can remember many industry "firsts," too. One being that the original Briner economizer unit, now handled by J. O. Ross, was installed there in 1920

and is still in service. At this 50-ton soda mill, Mr. Howell has as a capable aide, F. F. SMITH, superintendent. Their plant, by the way, was recently presented with a Management-Employees Safety Award by the Employers Mutual Liability Insurance Co.

**INTERNATIONAL PAPER CO.**, Ticonderoga, N.Y. Out of historic Ticonderoga, where the preserved battlements of another war still look out over Lake Champlain, is one of the mills of the wide-flung I.P. interests. It is always a pleasure to stop here, and enjoy a visit with T. C. "Bob" Warren, technical superintendent for the plant.

**WARRENSBURG PULP & PAPER CO.**, Warrensburg, N.Y. Formerly running on newsprint, this plant has been down since April. However, rumors have been current that it was to start up on tissue, and quantities of wood are coming into the yard in preparation for the opening. FRANK ST. LAWRENCE, one of the veterans of the industry, and very highly regarded in the local community at Warrensburg, is in charge.

**FINCH, PRUYN & CO., INC.**, Glens Falls, N.Y. Something is always going on to keep the plant in order; improve the quality or quantity of its production; or just to make it look nice. This trip was no exception. For in talking and visiting the plant with LYMAN BEEMAN, JR., and KARL KROETZ in engineering and



THROUGH THE PORT at Waddington, N.Y., James Pemberton, a 30-year veteran, oversees operations for handling 50,000 cords of pulpwood annually from Canada destined for St. Regis mills in New York. This is one of the unusual operations of the industry.



**DICK LEWIS** in technical, a rather extensive program was discussed. Across the street from the plant and alongside the Hudson, some old buildings are to be razed and the entire area is to be converted into a beautiful park, both for employees and the city. In the plant itself a new wood room is in progress with foundations down and walls under construction. There will be a new enclosed loading platform for rail cars and trucks; a pneumatic conveyor system to dispose of waste from the machines; and a new Otis freight elevator. Finch, Pruyn work is continuing to improve its book papers, particularly in brightness.

**MARINETTE PAPER CO.**, Fort Edward, N.Y. **BAKER MIDDLETON** has come over from Army Ordnance to take charge of public relations for Marinette, and **HENRY GODSHALL, JR.**, production manager just out from the West Coast—Coo's Bay, to be exact. This is one of Scott Paper's wholly-owned subsidiaries, with another across the Hudson river at South Glens Falls.

**GOTHAM PAPER CO.**, Battenville, N.Y. **RUSSELL E. GREY**, general manager, at Saranac, is leader of the association in New York. Another fine plant in the greatest and one of the largest industries in this country—paper!



#### NORTHEAST NOTES

**CHAS. M. DURKEE**, formerly at St. Regis Paper Co. in Deferiet, N. Y., is new sulfite superintendent for the Millinocket, Me., mill of Great Northern Paper Co.

**WILLIAM H. DUNN**, retired treasurer and director of Raybestos-Manhattan, Inc., died Sept. 29 at his home in South Orange, N. J. He was 69.

**GEO. E. O'CONNOR**, president and treasurer of Mohawk Paper Mills, at Cohoes and Waterford, N. Y., is another one of the men of the industry saluted in the Noble & Wood *Agitator*. Born in Waterford, he graduated from Yale and Columbia Law and is a Phi Beta Kappa. Mohawk's production has increased from 5,000 to 21,000 tons annually in 20 years.

**R. C. DOANE**, vice president in charge of sales, International Paper Co., has appointed **D. H. KENNEDY**, western sales manager, **J. D. DOOLEY** as assistant kraft linerboard sales, and **N. P. SPARKMAN**, assistant for kraft paper and bag sales.

**WILLIAM I. THOMAS**, general sales manager, has been named to board of Tubular Products Division of The Babcock and Wilcox Co. He is a graduate of Carnegie Tech; with B&W since 1932.

**ALEXANDER D. KISCHITZ** and **JEROME WILKENFELD** have assumed posts for Hooker Electrochemical Co., Mr. Kischitz in charge of research of technical literature, and Mr. Wilkenfeld, supervisor of process study.

**WILLIAM GREELEY**, vice president of F. C. Huyck & Sons, and personally known to many in the industry in the East, died Sept. 17 in Albany, N. Y. Mr. Greeley, as a member of the sales staff of the Huyck mills felt division, has called on mills in Massachusetts, Connecticut, Pennsylvania, Delaware, Maryland, West Virginia and states in the Southeast since 1921. In 1948 he was elected treasurer of Huyck and made a member of its board. In 1950 he was promoted to v.p. in charge of felt sales.

**CARL D. PERKINS**, Bucksport, Me., was



**WALLACE H. HOWELL**, resident manager, New York & Pennsylvania Co., Willsboro, N.Y., receives safety award given to management and employees of his plant by the Employers Mutual Liability Insurance Co. From Mr. Howell, at left, are: William Tingley, vice president of the plant union; Fastus E. Smith,

superintendent; Frank Flora, general repair foreman; C. A. McGinnis, safety engineer from the insurance company; Walter E. Stafford, electrical foreman; Lawrence Calkins, machinist; Clarence W. Blanchard, yard foreman; and John Costin, repair man.

awarded the Fred C. Boyce student scholarship by the Superintendents Association at its Northeastern Division meeting Sept. 19. The presentation was made by **A. E. BACHMANN**, vice chairman of the national association. Mr. Perkins is a senior in pulp and paper technology at the University of Maine.

**HAROLD E. INGALLS** will represent Sveen-Pedersen Corp. in the New England area. Mr. Ingalls was formerly with the paper mill department of Nichols Engineering and Research Corp., and a few months ago resigned to represent manufacturers in New England through association with Ruel E. Taylor, Jr., in Portland, Me.

**ANTHONY SCAIDONE** and **EDWIN J. BAKEWELL** are honorary president and vice president, respectively, of the Robert Gair Co. Old Timers' Association. Recent Robert Gair Co. appointments include: **GEORGE J. TOOKER**, division manager of the Natick (Mass.) boxboards division; **RUSSELL D. SCRIBNER**, division manager of Thames River (New London, Conn.) mill and box shop; and **JAMES C. HOW**, assistant manager of industrial relations in New York City.

**JOHN BRUSH** has succeeded **L. J. SMITH** as production manager of Gould Paper Co., Lyons Falls, N. Y.

**FREDERICK L. CURTIS**, retired vice president of Raybestos-Manhattan, Inc. and former general manager of the Manhattan Rubber Division, died Sept. 20 at his home in Passaic, N. J. He was 84. He was believed oldest pioneer in the American rubber industry, having started as a shipping boy with New York Belting & Packing Company 70 years ago.

**LAURENCE F. WHITEMORE**, president of the Brown Co., was elected director of the Boston & Maine Railroad.

**RICHARD HARPER**, has been appointed a sales representative of the Fiberglas Division of Libbey-Owens-Ford Glass Co. and assigned to its Boston office. Mr. Harper will work directly with **HILARY F. SMART**, district manager for fiberglas sales in the New England area.

**ROBERT GRANT**, executive of Parsons & Whittemore, Inc., died Sept. 21 at Larchmont, N. Y. The entire business career of Mr. Grant was spent in this industry, and he joined Lyddon-Parsons & Whittemore as manager of the Edinburgh (Scotland) office 30 years ago. A native of England, he served as a major in the British army in World War I.

**GEO. M. SUYDAM**, Riegel, has been elected chairman for 1952-53 of Penn-N.J.-Del. Superintendents Division. **A. J. LUETTGEN**, Glatfelter Co., has been elected first v. c.; **CLAR-**

**ENCE F. KINGSTON**, Hammernill, second v. c.; **C. D. COFFMAN**, Chesapeake Paperboard, third v. c.; and **A. M. HARTLEY**, Nopco, secy-treas.

#### MIDWEST NOTES

**TEX COLLINS**, technical department, Thilmany Pulp & Paper Co., Kaukauna, Wis., is building himself a new home in Appleton.

**R. G. BAKER** has been appointed Regional Sales Representative of DeLaval Steam Turbine Company, Trenton, N.J. His sales representation will extend over the territories of the company's Chicago, Detroit and Minneapolis operations, but will continue to make his headquarters in Chicago.

**C. C. BRAY** was named Manager of the Chicago District Office of DeLaval. He will assume charge of all sales activities of the Company in this territory.

**WILLIAM L. GILLESPIE** is the new field salesman of Hooker Electrochemical Co. for Chicago and the Midwest area. He was formerly in the sales department on technical service.

**W. M. WRIGHT**, director of service operations for Kimberly-Clark Corp., Neenah, was elected administrative vice president of International Cellulose Products company with headquarters in Chicago.

**MISS BARBARA BOON**, daughter of **H. G. BOON**, vice president of Kimberly-Clark Corp. recently announced her engagement and plans a January wedding to John Hollingsworth of Wausau, Wis.

**WILLIAM SHINNICK**, Glendale, Ohio, has been promoted to junior industrial engineer of The Gardner Board and Carton Co., Middletown and Lockland, Ohio. He has been with Gardner since 1950.

**L. A. (BILL) GARDINER** has been transferred from Nekoosa-Edwards' Chicago office to executive sales offices at Port Edwards, Wis., as an assistant sales manager.

**DR. EMIL HEUSER**, research associate emeritus of the Institute of Paper Chemistry, who now resides in La Jolla, California, was honored recently when he was eulogized by Das Papier, publication of the German Association of Pulp and Paper Chemists and Engineers. The occasion was Dr. Heuser's 70th birthday. He was given the Association's highest award, the Alexander Mitscherlich Denkmünze, a coveted medal.

**HOWARD DITMYER**, Middletown, O., has been promoted to tour foreman at Mill II of the Gardner Board and Carton Co.



**The Faster Felts Run  
The Greater The Need For  
VICKERY FELT CONDITIONERS**

***with the latest "Jordan"  
type vacuum boxes  
and the new high  
speed drives***

Take a hard look at your press felts as they're running today. Make certain that your Felt Conditioners have the capacity to keep them always fresh and open without mid-week shut downs or slow downs.



**BIRD MACHINE COMPANY**  
SOUTH WALPOLE • MASSACHUSETTS

# Alton Box Board Co.

## MANAGEMENT ORGANIZATION

**MARVIN W. SWAIM**, First Vice President and General Manager, who announced management appointments at Alton Box Board Company.



In moves designed to broaden and further strengthen the top management organization of Alton Box Board Company, at Alton, Ill., Marvin W. Swaim, first vice president and general manager, has announced the appointment of two new executives in the prominent Midwest paperboard firm, and assignment of another executive to a newly-established key position.

New members of his staff are:

Ray W. Shaver, perhaps best known in the industry for his important role in creating the famed Baie Comeau development in Canada, who becomes manufacturing consultant at Alton.

J. Edmund Becker, formerly manager of the Chase Bag Company's Chagrin Falls, O., mill for the past seven years, who becomes production manager.

Continuing as members of what Mr. Swaim called Alton's "top management team":

R. H. Breyfogle, vice president in charge of manufacturing, who came to Alton Box Board from Michigan in 1930, and has participated in many of the Alton developments that have made it a leader in the paperboard industry.

R. Frank Hollis, who has been appointed to the newly-established post of staff engineer for overall Alton company operations. His new duties afford him greater opportunity for development work. Hollis was educated at Louisville and Purdue Universities; joined Alton's Lafayette, Ind., mill in 1928.

"Thus we have a key staff which is commensurate with the growth of the company and we are better equipped to maintain our strong position and continue

progress," Mr. Swaim told PULP & PAPER in announcing the appointments.

"Our mill has had virtually continuous round-the-clock operation, seven days a week, since 1932," he said. "Since the Altonian, our No. 4 machine and one of the largest cylinder machines in the world (a 216-in. Beloit, with Westinghouse drive) went into operation a number of years ago, and other machines have been improved and speeded up, our capacity has passed 700 tons a day. It was to further improve quality and increase production and continue our general progressive policies that our management organization was further strengthened."

Mr. Shaver was born in Dexter, N.Y., and was graduated in mechanical engineering from Clarkson College, Potsdam, N.Y., in 1917. During his 35 years in the Canadian and United States paper industry, he has built and operated several mills. He was manager of Oswego Falls, N.Y., and Sealright Corp. operations at Fulton, N.Y., mills before being called to Quebec by the Ontario Paper Co. to literally hew the new Baie Comeau mill and community out of the wilderness in the mid-'30's. The Baie Comeau mill is one of the most modern and efficient newsprint mills with some of the fastest paper machines in operation.

Consulting work for Riegel Corp., in New Jersey, and the rehabilitation of Gould Paper Co., Lyons Falls, N.Y., which he headed as president, were important activities of Mr. Shaver in the following years.

J. Edmund Becker, born in Syracuse, N.Y., was graduated from N. Y. State College of Forestry, Syracuse University, in 1935. He spent six years with International Paper Co. at Fort Edward, N.Y., and the past 11 years with Chase Bag Co., Chagrin Falls, O. He was plant manager there for the past seven years and had charge of a modernization program completed last April, installing a new Fourdrinier machine which increased total mill production to five times what it had been with two cylinder machines.

Mr. Swaim, president of the National Paperboard Association, came to Alton in 1927 with a new concept of paperboard mass production and sales. Since 1944 he

has headed all Alton activities.

The Alton mill is strategically located. It is close to the source of its raw materials. The highly industrialized area surrounding the company provides a ready market for its products and services. Transportation facilities to serve the company's customers throughout the entire midwest are unexcelled. They include rail, river and highway.

### Harry Moore and Wife Visit Pacific Coast

Harry Moore, president of Beloit Iron Works, Beloit, Wis., and his wife made their first trip to the Pacific Northwest—United States and Canada—in 12 years during late September. Highlights were seeing the new Beloit machine at Weyerhaeuser Timber Co. in Longview, Wash., and the newsprint machine at Elk Falls, B.C., with features shared by Beloit and Dominion Engineering, the builder.

Russell Goodwillie, Pacific Coast representative of Beloit, accompanied the Moores on part of their travels.

### Allan Milham Wed; Returns to New Post

Allan B. Milham, newly chosen president of Michigan Paper Co., of Plainwell, Mich., and formerly president of Bryant Paper Co., now St. Regis, in Kalamazoo, was married Sept. 23 in Couer d'Alene, Idaho, to the former Mrs. Robert Gale Boyd of Spokane, Wash.

Mr. Milham told PULP & PAPER that executive post in Plainwell for a few days when he took off for the west to be married. Mr. and Mrs. Milham returned after a two weeks honeymoon to Michigan and his new job on Oct. 6.

Mr. Milham told PULP & PAPER that he intends to continue with the same staff and policies as Michigan Paper followed under the presidency of Dwight Stocker. Mr. Milham said: "Mr. Stocker did an outstanding job at Michigan Paper Co. and he is taking over a big job as new president of KVP Co. and we all have complete confidence that he will do an outstanding job there."

Mr. Milham is son of W. B. Milham, one of the first Bryant directors, and nephew of Frank Milham, one of the founders of Bryant.

### Ketchikan Is Booming As Pulp Mill Takes Shape

In anticipation of completion of the first Alaska pulp industry, at the northern outskirts of town, in Ward Cove, the city of Ketchikan has already added \$1,000,000 in sewers and sidewalks and has an \$8,000,000 waterfront arterial roads and street paving project under way, to be paid in federal funds.

Also U.S. engineers plan a \$3,000,000 harbor traffic development and a \$3,250,000 bond issue has been approved for electric, water and telephone services. A 100-unit apartment was recently built and two more of 32 and 120 units are under way, the three costing \$3,250,000.

Work began in July on the Ketchikan Pulp Co. facilities.



**MANAGEMENT REORGANIZATION** at Alton Box Board involved these men (l to r): **RAY W. SHAVER**, Manufacturing Consultant; **R. H. BREYFOGLE**, who carries on as Vice President in



Charge of Manufacturing; **J. EDMUND BECKER**, Production Manager, and **R. FRANK HOLLIS**, Staff Engineer.

to **SOLVE PULPING PROBLEMS** economically

BOWATERS SOUTHERN PAPER CORP. SELECTS

**SPROUT-WALDRON**

**36-2 REFINERS**

## **\$50 Million Paper Mill Contract Let**

A general contract for the construction of an integrated newsprint and sulphate pulp mill at Calhoun, Tenn., was let here yesterday by Bowaters Southern Paper Corporation to Fraser, Brace and Co., New York; Turner Construction Co., New York, and Roane Anderson of Tennessee, acting jointly.

The contract was let by Bowaters' representatives in the office of J. E. Surrine Co., consulting engineers to Bowaters Southern Paper Corporation. The Surrine firm was also engineers for the Coosa River co-operative newsprint mill in Alabama which is now in production.

Grading at the site, which is between Chattanooga and

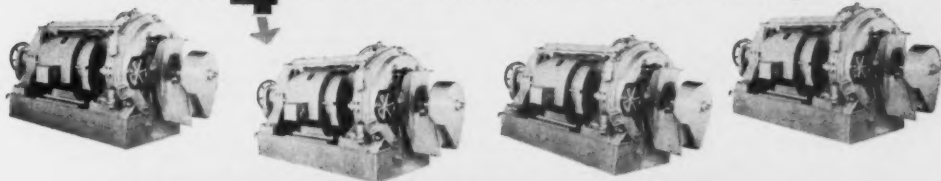
For:

- ✓ **HIGH PULP QUALITY**
- ✓ **HIGH CAPACITY**
- ✓ **FLEXIBILITY OF OPERATION**
- ✓ **RUGGED CONSTRUCTION**
- ✓ **LOW MAINTENANCE**

Greenville S. C. News  
August 7, 1952

**THIS NEWSPRINT AND KRAFT PULP MILL**

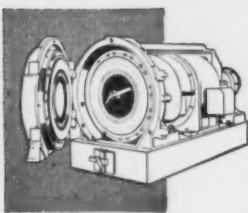
will use **4** SPROUT-WALDRON REFINERS to Pulp



**GROUNDWOOD TAILINGS AND KRAFT REJECTS**

Have you a pulping problem? Send us the details for a careful analysis and recommendations. Write Sprout-Waldron & Co., Inc., 32 Logan Street, Muncy, Pennsylvania.

**S  
W**



**SPROUT-WALDRON**  
**PULP REFINERS**



## NEW HANSEL-DUNBAR CHIPPER IN MILLS

Two slab chippers of a new design originally developed by James R. Dunbar, Vancouver, B.C., inventor, and further modified by Mr. Dunbar and by Hansel Engineering Co., of Vancouver and Seattle, have recently been installed in the Pacific Northwest, and their performance will be watched with interest by pulp mill and sawmill operators.

A 48-in. chipper built for Lumber By-Products Co. in Spokane, Wash., and now in operation there, was tested in Seattle for observation by representatives of the industry, and the chips produced during these tests were of such a uniform high quality that experts expressed the opinion that there would be no need to screen them for sulfate or sulfite processes.

The second chipper, a 60 in. model, has been installed at the Pilot Rock Lumber Co., Pilot Rock, Ore., and is giving good results. This is in a new \$5,000,000 board mill being built there by its subsidiary, Oregon Fibre Products Inc. Naturally, chips produced from sawmill waste and slabs and edgings will not be of as high quality as those produced from whole logs, due to the many feather edges of the former. Nevertheless the chipper has been highly efficient.

A demonstration chipper with a 14½-in. round spout is now being made near Montreal for demonstration purposes.

The idea of a new chipper was based on Mr. Dunbar's conception of a machine that would draw a knife across a stick rather than chop off chips, and a production chipper working on that principle was successfully operated at Sorg Pulp Co., now Howe Sound Pulp Co., at Port Mellon, B.C. Screening was not necessary, the chips being of such high quality.

Mr. Dunbar then developed the idea of supplying horizontal feed to the chipper, and this proved so successful that it was incorporated into the recently installed units previously described.

Hansel Engineering Co. acquired sole rights to design and manufacture chippers using the Dunbar knife setting in 1952. Sydney Hansel felt that the application of a thorough engineering analysis to a machine incorporating these slicing knives would produce the most practical means of chipping wood and, accordingly, he placed E. O. Lunn of his Vancouver office in charge of further design and development of the Hansel chipper. This new chipper has a vertical disc, horizontal shaft and is supplied with the option of horizontal or drop feed. A range of sizes from 36 in. disc diameter to 183 in. disc is offered. Demonstrations have shown that the chippers are remarkably free from vibration and do not require heavy foundations.

The horizontal feed makes it more convenient to arrange the wood on the conveyor feeding the chipper with less likelihood of the pieces being twisted or jammed in the spout, and for this reason it has become popular in the veneer and plywood industries. When dealing with logs and slabs the horizontal feed produces a very uniform chip even for the first few cuts because the wood is con-

veyed to the disc at the rated feed speed of the chipper rather than the variable velocity reached in sliding down the chute.

Possible elimination of slashers and log chutes and reduction in the height of the conveying structure are some expected savings resulting from the use of this machine. The fact that screens are unnecessary and heavy foundations can be dispensed with are other important factors. The woodroom thus installed can be extremely economical in original layout, in running cost and operating labor.

Mill operators interested in recovery of waste wood suggest that rather than gather slabs in a waste conveyor system and bringing them all together to one chipper, a chipper can be located following each resaw and edger to immediately chip any waste wood produced by the respective machines and then blow the chips to a central collecting point. A chip conveying system is, of course, much simpler and requires less space than a waste wood conveying system.

## Crown Z Paper School Starts 20th Year

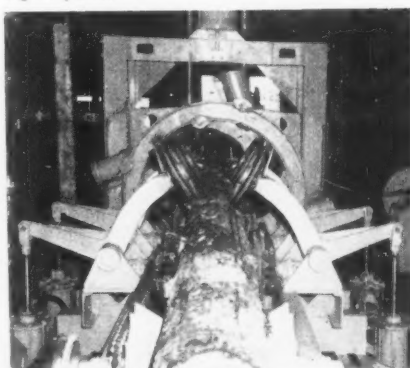
Crown Zellerbach Paper School, Camas, Wash., opened fall term courses for CZ employes in mid-October—its 20th year and first year as a collegiate-accepted graduate school.

Walter C. Jacoby, technical supervisor and acting dean, states graduate study will operate at entirely different level than undergraduate. Credit is allowed towards masters degrees in science or engineering at Oregon State College. The first course, "Economic Balance," is conducted by Prof. J. S. Walton, head of chemical engineering department, supplemented by G. W. Gleeson, dean of engineering and industrial arts, both of O.S.C.

Enrollment in the graduate school presupposes a bachelor degree. Eleven students currently enrolled in the course.

F. W. Flynn, technical assistant to kraft mill superintendent, is principal of the paper school. New professors include John Grill, assistant supervisor of mill purchases, and Lauron Giersch, technical assistant to the tissue mill superintendent.

**NEW MECHANICAL ROTO BARKER** developed by Nicholson Mfg. Co., 5416-14th N.W., Seattle, Wash. Barking mechanism in background. Wheels actuated by Hanna air cylinders hold log in place.



## Ober Announces Goal

J. L. Ober, vice president of Scott Paper Co. and chairman of the executive committee for the University of Maine Pulp and Paper Foundation, has announced plans to enlarge the Foundation scholarship program. Under the new program, tuition scholarships will be available to qualified junior and senior engineering and forestry students who plan to enter this industry.

## S. S. Harkavy of Geigy, Returns From Europe

S. S. Harkavy, manager, Paper Dept. of Geigy Co., Inc., manufacturers of dyestuffs and chemicals, has returned from a six weeks' trip through Europe. Mr. Harkavy spent considerable time in Switzerland conferring with Geigy research and technical staffs exchanging data on European and American techniques on paper dyeing. He also visited Geigy plants at Manchester, England, and Glasgow, Scotland, where technical discussions were held. Visits were made to mills in Switzerland and Germany.

## Hoberg Buys Little Rapids Mill

Hoberg Paper Mills became the owners of the Little Rapids Pulp division of the Little Rapids Pulp Co., Oct. 1. The Little Rapids organization headed by Charles N. Egan, president and treasurer, will continue its other operations at Shawano Paper Mills.

Mr. Egan said that the sale will in no way affect the Shawano operation because of other pulp sources. He indicated the firm will probably install pulp making equipment at Shawano.

Hoberg Paper Mills has been purchasing nearly the entire output of 700 tons of groundwood per month from Little Rapids. The purchase guarantees the company control of the supply.

J. M. Conway, president of Hoberg, said the Little Rapids resident manager will continue to be Robert Leaf, Jr. Superintendent is James Miller.

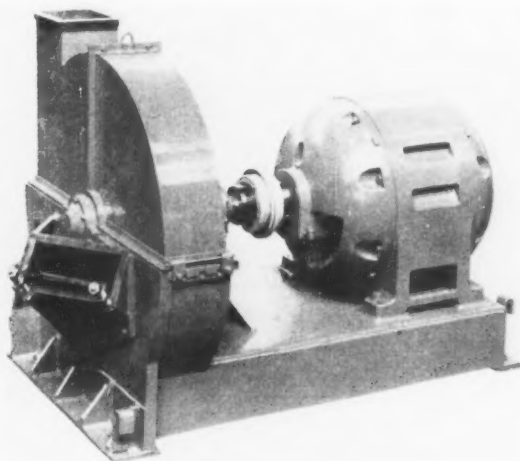
## New Mechanical Barker Introduced in West

A new mechanical Roto wood barker, developed by Nicholson Mfg. Co., 5416-14th N.W., Seattle, has its maiden installation in the Cascade Lumber Co., Hakima, Wash., which is making chips for Longview Fibre Co. Chips are shipped by rail to Longview, Wash., about 200 miles.

Barking logs 6 in. to 40 in. diameter, feed rate ranges from 30 to 60 f.p.m. The barker has overall length with feed and off-bearing conveyors of about 100 ft. Machine is operated by one man with push buttons.

Barking is accomplished by a series of abraders which are forced against the log by means of Lindberg air cylinders. The pneumatic mechanism keeps abraders closely following shape of log. It is credited with excellent cleaning around knots and power consumption is not expected to exceed 150 hp. for the 6 to 40 in. unit. Logs are held in position on conveyor rolls by wheels actuated by Hanna air cylinders.





# WHAT IS A CHIPPER?

Is it a machine that makes chips of whole logs or slabs and edgings of such high quality that  
**SCREENING MAY BE ELIMINATED?**

Is it a machine with vibration so negligible that  
**EXPENSIVE FOUNDATIONS ARE UNNECESSARY?**

Is it a machine to which whole logs, slabs or edgings can be fed horizontally so that  
**SLASHING MAY BE ELIMINATED**

and

**HIGH WOODROOM STRUCTURES ARE UNNECESSARY?**

If so, it must be a

## HANSEL CHIPPER

with the patented Dunbar knife setting.

The machine shown above was designed to chip sawmill waste. Chippers of this type are running on a simple concrete slab designed only to take the weight of the chipper.

Chippers with both drop feed and horizontal feed are available with a wide range of spout sizes and shapes for **WHOLE LOGS OR SAWMILL WASTE.**

Both types are installed with disc vertical and shaft horizontal, and with overhead or bottom discharge.

We are arranging to have a demonstration unit in your area in the near future.

Inquiries are invited and these will receive prompt and careful attention.

## HANSEL ENGINEERING COMPANY INC. LTD.

1500 WESTLAKE AVENUE, N.,  
SEATTLE 9, WASHINGTON.

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VANCOUVER 9, B. C.

# NEWS IN PICTURES—ABOUT INDUSTRY MEN COAST TO COAST

## NEW OFFICERS ELECTED BY NORTHWESTERN SUPTS.



LARRY W. MURTFELDT (above-left), Pulp Supt., Consolidated Water Power & Paper, Wisconsin Rapids, elected Chairman, and JOHN A. MCPHERSON (above-right), Assistant Plant Manager, Mosinee Paper Co., Mosinee, Wis., elected Secretary-Treas. of Northwestern Division of Supts. Assn. for 1952-3. Mr. Murtfeldt, born in St. Louis, graduated from Washington University in 1930, joined Consolidated in 1940. Mr. McPherson, Marine Capt. in war, graduated from Dartmouth and University of Wisconsin won degrees at Dartmouth and U. of Wisconsin.

MYLES W. REIF (below-left), Gen. Supt. and Asst. Gen. Mgr., Blandin Paper Co., was elected First Vice Chairman. GUS K. KLAUS (below-right), Supt. of Converting Dept., Northern Paper Mills, Green Bay, Wis., moved up to Second Vice Chairman. Both have been many years with their companies.

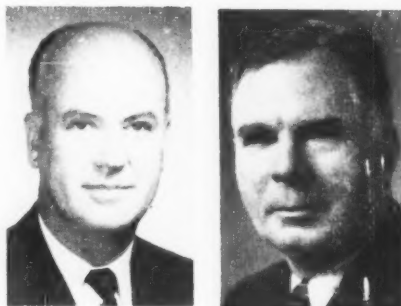


## IN INDUSTRY NEWS



ALBERT C. MAHANA (left), appointed Manager of Sales to the Pulp Industry for the Taylor Instrument Companies of Rochester, N. Y. He also will be in charge of sales to lumber and industries. Graduate of St. Lawrence U., he joined Taylor in 1944. He succeeds Clayton D. DeMers, who retired after 24 years service. DR. ROLAND E. KREMERS (right), appointed Research Associate in Organic Chemistry at the Institute of Paper Chemistry, Appleton, Wis., according to President Westbrook Steele. Dr. Kremers received AB and PhD degrees at U. of Wisconsin. He taught at Wabash, Vanderbilt and Ohio State and has been recently with General Foods Laboratories.

## ON BOARD OF FIBREBOARD



BERN P. ALTICK (left), promoted to Vice President in charge of Sales of Fibreboard Products Inc., and WILLIAM L. KEADY (right), President of Pabco Products Inc., have been elected to the board of directors of Fibreboard. Mr. Altick has been 27 years with the company. A westerner originally, he was at Philadelphia for its eastern converting operations before returning several years ago to San Francisco headquarters. Mr. Keady joined Pabco after serving as President of U. S. Gypsum, and later, of Marathon Corp. Mr. Altick succeeded E. J. Farina, who has retired as Sales V.P. and as board member.

## IN NORTHEASTERN NEWS



J. W. (WALT) COUTURE (left), who has been named Northeastern Sales Manager for Black-Clawson Co. and its affiliates, according to Executive Vice Pres. J. D. Haskell. Mr. Couture will continue headquarters at Dilts Machine Works Div. office, where he has been Chief Engineer. His territory includes New England, N. Y., N. J. and Penn., and District Sales Engineers A. J. Felton, Jack McKela and W. T. Schick carry on under him. Mr. Couture went to Columbia and Syracuse Us., was engineer with Consolidated of Canada and St. Regis; joined Dilts in 1939.

E. J. DOONAN (right), who has become Manager of Sales in a new sales office in New York City for Gould Paper Sales Corp., distributing company for Gould Paper Co., Lyons Falls, N. Y., makers of groundwood papers.

## IN MIDDLE WEST NEWS



JOHN HAYWARD (left), son of late former President of KVP, Ralph Hayward, has been appointed Assistant General Manager of Kalamazoo Label Co., Kalamazoo, Mich., one of finest label plants in U. S., making 5 million per day. John was in Planning and Production Control at KVP. He graduated from Univ. of Michigan in 1945. His late father was Michigan regent.

WILLIAM S. WOODWARD (right), whose promotion to Resident Manager of Hennepin Paper Co., in Little Falls, Minnesota, was recently announced. He had been Mill Mgr. This mill makes 35 tons of groundwood and 50 tons of book paper and specialties per day.



## IN JAPAN AND HAWAII

BLAKE HONEYMAN (left), Vice President of Morden Machines Co., Portland, Ore., who has been calling on Japanese Mills from Tokyo to Kobe, and on northern island of Hokkaido. There are 26 Morden Stock-Makers now in use in 12 Japanese Mills. Mrs. Honeyman accompanied him.

WILLIAM A. ROBINSON (right), Senior Pulp and Paper Technician at Hawaiian Sugar Plantation Assn.'s experiment station at Wai-pahu, Honolulu. They hope to build a paper mill, using bagasse. Mr. Robinson was in Florida, Alabama and Southern Mills for some years, later at Atenquique, Mexico, and Fibreboard in East Antioch, Calif.

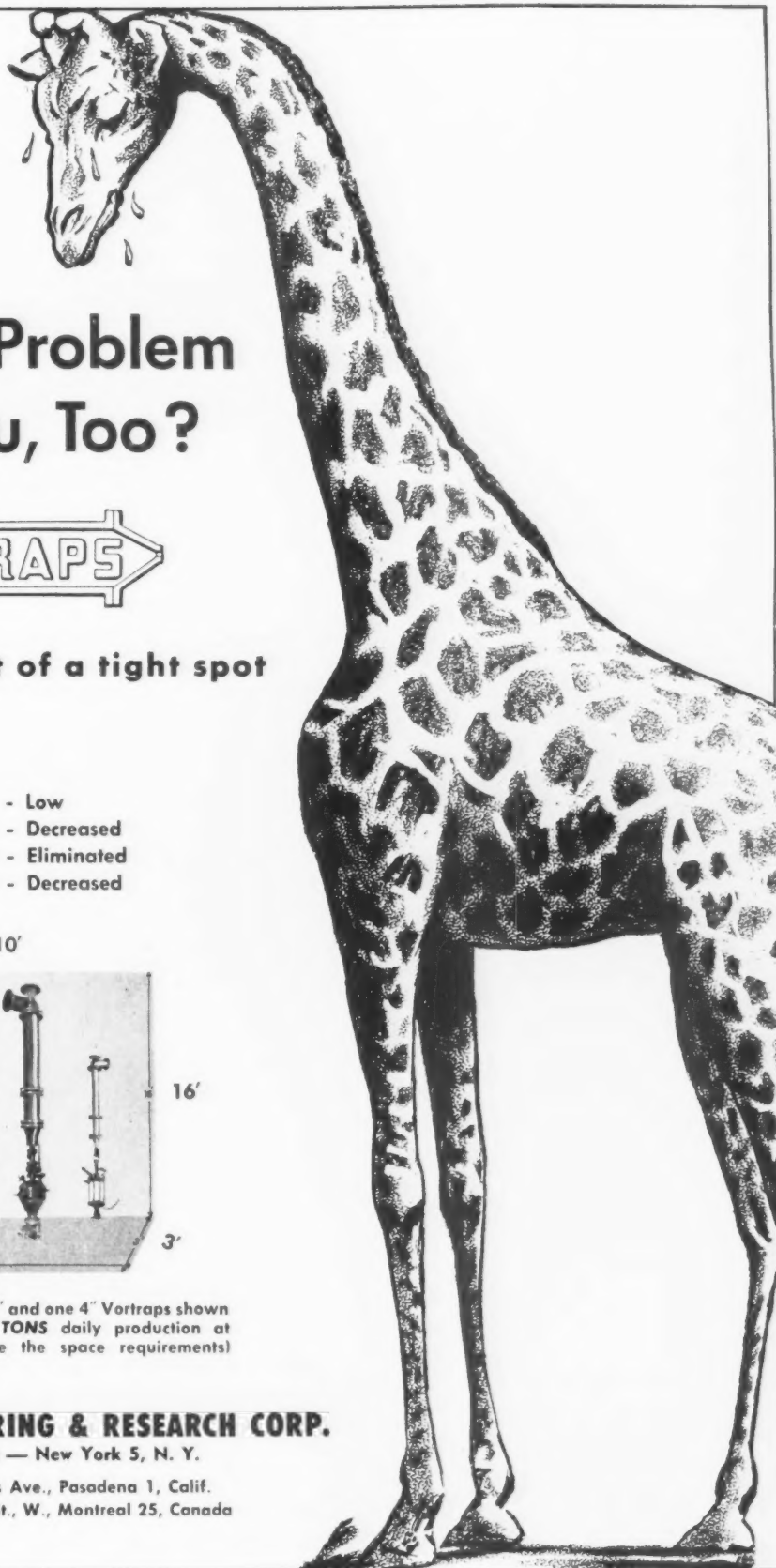


## IN PACIFIC COAST NEWS

KENNETH H. JONES (left), who moved west last May from New York to become Pacific Northwest Manager for Ross Engineering Corp., offices in Skinner Bldg., Seattle. A Pratt Institute graduate, he covered upper New York, part of New England and Jersey for J. O. Ross for number of years.

NORMAN JOHNSON (right), appointed Assistant to the President, Zina A. Wise, of Griffith Rubber Mills, Portland, Ore. Mr. Johnson had been Asst. Gen. Mgr., was with Griffith ten years, and worked on rubber allocations in Washington the past two years.



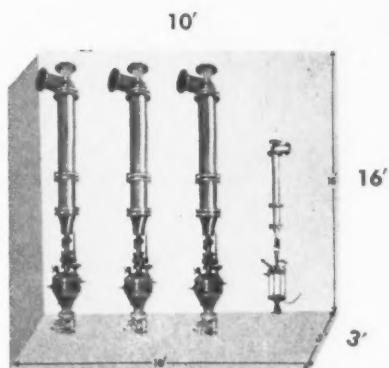


## Space a Problem With You, Too?



will get you out of a tight spot

- Fibre Losses - Low
- Maintenance - Decreased
- Rifflers - Eliminated
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The installation of three 10" and one 4" Vortraps shown above will handle **150 TONS** daily production at 0.75% consistency. (Note the space requirements)

### **NICHOLS ENGINEERING & RESEARCH CORP.**

70 Pine Street — New York 5, N. Y.

40 S. Los Robles Ave., Pasadena 1, Calif.

1477 Sherbrooke St., W., Montreal 25, Canada

# MACHINE TENDER Munchausen Stories

**FRANCIS E. SCHILLER,**  
Operating Supt.  
of Wide Supercalenders,  
Oxford Paper Co.,  
Rumford, Me., won  
the prize this month  
for his story in verse.



For our Machinetender Munchausen tall story this month we have accepted as the prize winner a poem.

The author is Francis E. Schiller, who is operating superintendent of wide supercalenders at Oxford Paper Co., Rumford, Maine.

We are very happy indeed to send Mr. Schiller \$5 for his contribution and will do the same for you, if you have a tall story about mills or mill people, of this or some other world, which we can publish in this corner.

Mr. Schiller was born in Wisconsin Rapids, Wis. At 17, out of high school, he started in the finishing room of Consolidated Water Power & Paper Co., at the Rapids. That was in 1929, he admits. He operated a 156 in. Hamblet cutter for a few years and then went into the supercalender department. He was promoted to shift foreman and then to assistant superintendent of calenders and rewinders. He left the Rapids five years ago to accept his present position at Rumford.

And now here's his story—in verse:

## Story of a Maine Papermaker —by Francis E. Schiller

Long ago, Augustus Stanwood had a paper mill in Maine.  
He was quite a clever fellow and not the slightest bit insane.  
When he was making paper back in Eighteen Sixty Two,  
They were using rags for pulp, didn't know what else to do.

But when the Civil War came, and rags were not for sale,  
They almost shut his mill down to use it for a jail.  
But Augustus cut his finger and while bandaging the gash,  
He had a bright idea—it really was a flash.

He remembered that in Egypt, on the railroad by the Nile,  
They didn't burn coal and they didn't burn oil.  
They burned Egyptian mummies to get a head of steam,  
There was such a big supply that it made Augustus beam.

So he sent away to Egypt and bought a few shiploads.  
He brought them to his mill and took off all their clothes.

Every mummy that he bought was wrapped in thirty pounds of linen,  
And the fine papyrus stuffing—well, he used it for the fillin'.

He used up all the mummies to make some wrapping paper,  
He sold it to the merchants; to the butcher and the baker.  
But his employees all got sick and some customers they died,  
And poor old Augustus had to run away and hide.

For the cholera bug was hiding in the mummies clothes,  
Why Augustus didn't sterilize, only heaven knows.

Now this story proves a point that should be very plain—  
They made the "oldest" paper in the State of Maine.

## Compliments Passed On Elk Falls Mill Job

Compliments were passed across the border at the dedication of the Elk Falls Co. newsprint mill at Duncan Bay, recently. President H. J. Mackin in acknowledging the co-operation that led to the project's success paid tribute to Wilbur Lowndes, chief engineer, and others of Central Engineering, Crown-Zellerbach Corp.; Reed Hunt, vice president, E. W. Erickson, assistant vice president, and others in the C-Z management, San Francisco. Elk Falls Vice-President Robert J. Filberg referred to Donald S. Denman, C-Z vice president, as the first man on the coast to recognize the value of second growth timber for pulpwood.



THIS INTERESTING PICTURE taken at official opening of Elk Falls Co.'s brand new newsprint and groundwood mill caught four of top executives of interested sponsoring companies below a prophetic slogan: "PARTNERS IN PROSPERITY." They are (from left): H. J. FILBERG, Vice Pres. of Elk Falls Co. and Canadian Western Lumber Co., which is supplying wood for the new mill two miles north of Campbell River, B. C.; HENRY J. MACKIN, President of Elk Falls Co. and of Canadian Western; J. D. ZELLERBACH, Pres. of Crown Zellerbach Corp., and PAUL E. COOPER, Vice Pres. of Elk Falls and Pres. of Pacific Mills Ltd., Canadian daughter company of Crown Zellerbach.

## Producers' New Volume on Statistics

U. S. Pulp Producers Association Inc., James L. Ritchie, executive director, has issued its annual *Wood Pulp Statistics, 1952 Edition*, in which it revises slightly upward its forecast of future pulp production capacity in the United States from the figures it supplied, published in PULP & PAPER's World Review Number earlier this year.

Now total U. S. capacity is set for 21,259,594 tons in 1952, instead of 21,016,169. The calculated increase is in the South where its regional figure was boosted from 11,489,351 to 11,732,776. These figures compare with 18,857,834 for all U. S. in 1952 and 9,945,952 in the South this year. For more details on other regions see World Review page 53.

The U. S. Pulp Producers says in a foreword to its 230-page volume of statistics that it included data on these mills and expansions to be completed after next Jan. 1:

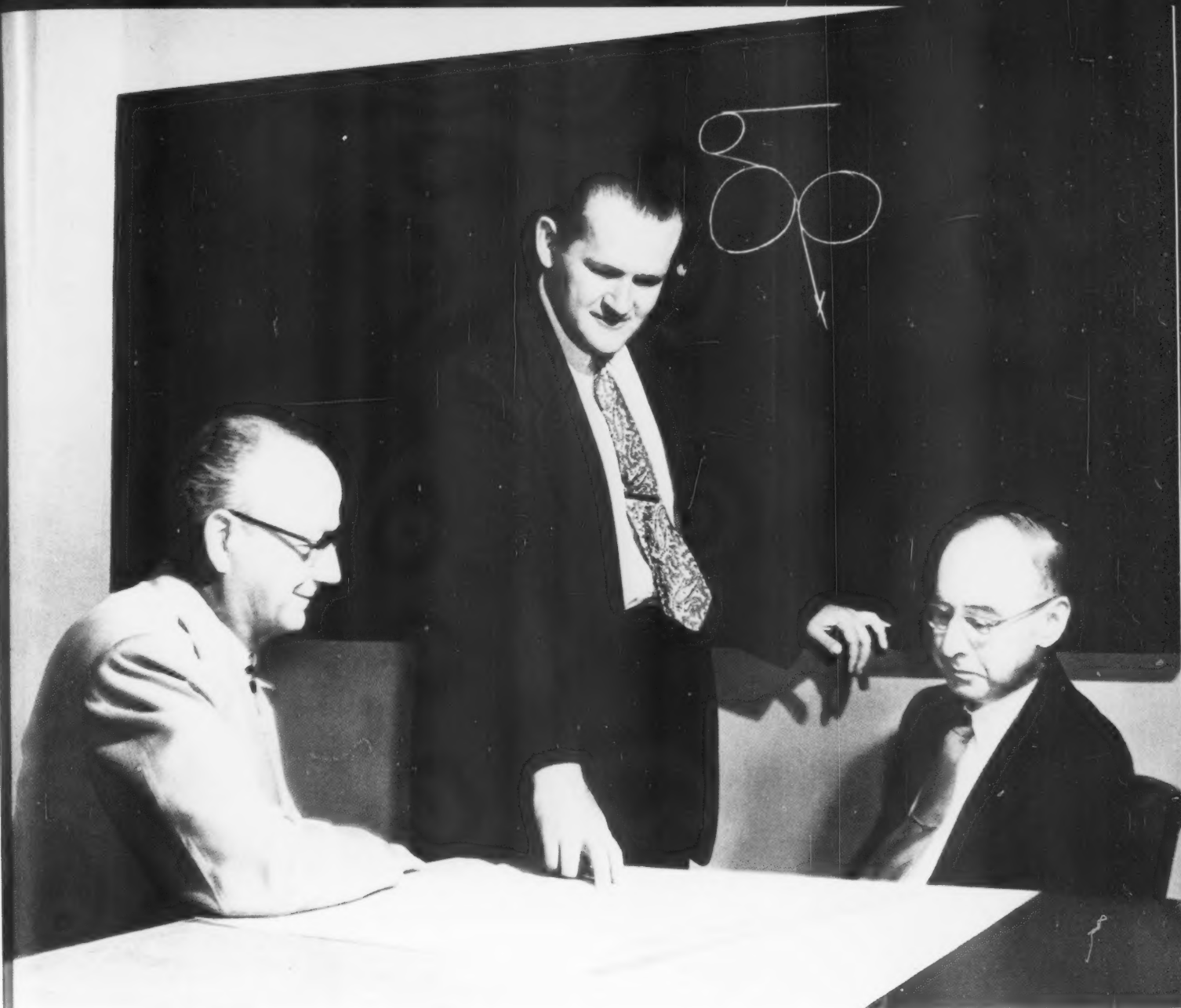
Bowater Southern (Charleston, Tenn.)  
International Paper (Natchez, Miss.)  
National Container (Valdosta, Ga.)  
Rayonier Inc. (Jesup, Ga.)  
Ruberoid Co. (Dallas, Tex.)  
St. Regis Paper (Jacksonville, Fla.)  
Buckeye Cotton Oil (Foley, Fla.)  
Ketchikan Pulp (Ketchikan, Alaska)  
Olin Industries (near Shreveport, La.)  
Rome Kraft (Rome, Ga.)  
St. Joe Paper (St. Joe, Fla.)  
Weyerhaeuser Timber (Everett, Wash.)

It did not include other projects, some of which it said were "definitely planned, but indefinite as to date of completion."

## Ontario-Manitoba Unions Hear First Safety Talk

For the first time in the 15 years of their history, the Ontario and Manitoba Council of Pulp and Paper Mill Unions invited a speaker to discuss problems of accident prevention in the mills. The talk was by Fred O. Soughton, services and safety director of LongLac Pulp & Paper Co. and general chairman of the Northwestern Branch of the Ontario Pulp & Paper Makers' Safety Association. His audience included delegates from 52 union locals representing 32,000 mill and woods workers.





**CLOSE COLLABORATION** with our customers results in machines designed for profitable production of paper and for ease of operation. In our engineering conference room, Harry Gochnauer (*left*), Chief Engineer of Northern Paper Mills, checks drawings for a wringer roll installation with Beloit's Chief Engineer Ed. Beachler (*standing*) and Assistant Chief Engineer Burton James.—*Beloit Iron Works, Beloit, Wis.*

WHEN YOU BUY BELOIT...YOU BUY MORE THAN A MACHINE!

# BELOIT

**PAPER MACHINERY**



# EQUIPMENT AND SUPPLY COMPANIES

## Carpenter Steel Tube Div. Announces Mill Expansion

Mill expansion to make possible an increase in production capacity by approximately 40% is underway at The Carpenter Steel Co.'s Alloy Tube Division in Union, N.J.

A new addition is being built to meet rising demand for stainless steel pipe and tubing. Carpenter President F. R. Palmer announced. This expansion will be achieved without a commensurate increase in the use of nickel and other strategic alloys because of the plant's emphasis on extra light wall pipe known as Schedule 5. Pipe of Schedule 5 and Schedule 10 means more pipe footage per ton of strategic alloy than possible in standard gauges.

The proposed addition is to be in production by the third quarter in 1953. The division produces stainless tubing and pipe in all standard sizes and gauges from approximately 1/4 inch O.D. to 4 1/2 inch O.D. The new facilities will increase production in this size range.

Other key products of the company include highly alloyed tubing for resistance to sulphuric and hydrochloric acid, and titanium metal tubing.

LINK-BELL CO. has issued a new catalog of over 200 sizes of cast tooth sprocket wheels available from stock. Copy of Book 2467 will be sent to interested readers on request. Write Link-Bell Company, 307 N. Michigan Ave., Chicago 1, Ill.

E. D. JONES & SONS CO. announces a 4-page brochure featuring the facilities and equipment of their fabricating plant. Due to recent major increases in size and capacity of fabricating facilities, the brochure explains Jones precision equipment, manned by personnel thoroughly experienced in mild steel and stainless steel fabricating, is now available for job or contract fabricating work.

ALLIS-CHALMERS Bulletin 52B6691A describing frame type centrifugal pumps designed to handle most ordinary pumping jobs requiring capacities up to 500 gpm and heads as high as 135 feet are available on request from the company at 995 S. 70th St., Milwaukee, Wis.

## D. J. MURRAY PLANT



Shown sealing the cornerstone of a new two-story brick addition, 126 by 115 feet, to their manufacturing plant is A. W. Plier, executive vice president, and general manager of D. J. Murray Manufacturing Co., Wausau, Wis. The addition is concrete and steel faced with brick exterior walls to match the remainder of the plant. Fred C. Boyce, company president, (left) gave dedication address during program in conjunction with the company's 70th anniversary. About 750 persons attended. D. J. Murray manufactures a specialized line of paper mill equipment and other machinery.

## Hooker Chemicals Ltd. Formed in British Columbia

R. L. Murray, president of Hooker Electrochemical Co., Niagara Falls, N.Y., announces formation of a new subsidiary, Hooker Chemicals, Ltd., a British Columbia corporation, which will cater to the demands of the rapidly expanding pulp and paper industry in Western Canada.

The new company has acquired a site of 60 acres in North Vancouver as a site, and adjacent tidelands have been leased to provide for deepwater transportation of raw materials and finished products. The site will provide for future manufacture of Hooker chemicals in that area.

While no definite plans have been made so far regarding construction of a plant, substantial tonnages of chlorine and caustic soda for the pulp and paper industry in British Columbia are now being supplied from the Hooker plant in Tacoma, Wash.

Among factors affecting selection of this site are availability of low cost hydroelectric power, excellent rail transportation which will be made available by the Canadian National Railways and general services available for maintaining a modern chemical plant.

Officers of Hooker Chemicals Ltd. will be: R. L. Murray, president; B. Klaussen, vice-president; A. Wilcox II, secretary, and D. A. Riordan, treasurer, all executives of Hooker Electrochemical Co.

JACKSON & CHURCH CO.'S president, C. W. STUART, announces promotion of L. F. REIMANN to assistant vice president of manufacturing at the Saginaw, Mich. plant. This company produces warm air furnaces, pulp presses, plastics molding machinery and brick making equipment.

THE FOXBORO CO. sets a periodic check of pressure instruments with a reliable test gauge has been known, in many instances, to save process fluid or otherwise reduce operating costs in amounts many times the cost of the test device. Such an instrument is the 6" Model P Test Gauge, made by Foxboro at Foxboro, Mass. The complete series of indicating gauges and accessories is described in Foxboro Bulletin 424, copies of which will be sent on request.

NOPCO CHEMICAL CO. has recently adopted "dressed up" drums for its shipments of chemicals to the pulp and paper industry. The black drums with yellow center band are expected to make quick identification possible and to be of advantage to customers who warehouse their products in palletized units. First drums of the new design went out Sept. 15.

NEW YORK BELTING & PACKING CO. has a booklet covering the toughness and high impact strength qualities of its plastics pipe moldings, extrusions and fabrication parts available for this industry. The materials are said to have many excellent applications in pulp and paper plants where corrosion, taste, and contamination are problems. The booklet may be obtained by writing the company at 1 Market Street, Passaic, N.J.

BABCOCK & WILCOX CO. in two announcements indicates purchase of facilities of a former shipyard at Brunswick, Ga., which will be converted into a plant to build boilers for the servicing of Southern industry, and of the establishment of a district sales office in Syracuse for its tubular products division to provide better service in the Northeast. L. Y. McCANDLESS will head the Syracuse office.

I. D. GREENSWARD was named vice president, director of manufacturing, general machinery division, ALLIS-CHALMERS MFG. CO. Oct. 1, according to W. A. Roberts, president. Mr. Greensward was recently named director of manufacturing for the division at which time he succeeded Fred Mackey who resigned as vice president in charge of manufacturing. Previously, he was general manager of Allis-Chalmers Norwood, O. works.

JOSEPH MORNINGSTAR, of MORNINGSTAR NICOL, INC., nationwide distributor and processor of starches, dextrines and adhesives, announced his company acquired the Jersey City factory and three departments of Invis, Spiden and Co. Other Invis, Spiden plants and departments were not included.

THE BAUER BROS. CO. have been manufacturing and installing the two types of cyclonic pulp cleaners invented by Hammermill Paper Co., Erie, Pa., and Howard Smith Paper Mills, Ltd., Cornwall, Ontario. They are trade-named Centri-Cleaners. Hammermill type is designated as No. 600 series, the Howard Smith type, as No. 622 series. Write for Bulletin No. P-4, Bauer Bros., 1706 Sheridan Ave., Springfield, O.

ELLIOTT CO., Jeannette, Pa., announces a new line of high-speed reduction gears for mechanical drive turbines. The new gears are available in built-in or coupled designs. Built-in gears include Elliott turbine and gear case firmly secured together, with turbine wheels and pinion mounted on the same sturdy, high-speed shaft. This eliminates exhaust-end bearing and coupling, permitting a compact unit of minimum overall length. Further details are in a descriptive bulletin, H-19, available through Elliott Co., Advertising Dept., Jeannette, Pa.

GEORGE F. KERR, formerly with Yale and Towne as assistant sales manager of gasoline and diesel powered fork lift trucks, is now sales engineer with LOBBELL UNITED CO., Wilmington, Del., subsidiary of United Engineering and Foundry Co. Mr. Kerr is a graduate engineer and well grounded on all Lobdell products, particularly rolls, roll calipers, calender stacks and roll grinders.

T. A. SULLIVAN, supervisor of order service in the A. O. SMITH CORP. Process Equipment Division for the past year was named product manager for the pressure vessels in the division. Also appointed was R. T. SPRINGATE, superintendent of production control.

BULKLEY, DUNTON PULP CO., INC., is now occupying re-modeled quarters and entire 15th floor of the headquarters of Bulkley, Dunton Organization at 295 Madison Ave., New York City.

# IT'S **Stebbins** SEMTILE and LININGS

... in the new kraft pulp mill of the  
**RIEDEL CAROLINA CORPORATION**

## **SEMTILE BUILT Means Longer Life**

for tile tanks. Semtile construction consists of hollow salt-glaze tiles, cored in two directions to permit both vertical and horizontal reinforcing. When laid and reinforced, the cores are solidly filled with concrete, resulting in a reinforced concrete wall faced on both sides with corrosion-resistant glazed tile.

## **SEMPATE LINED Means Longer Life**

for all process vessels. All Stebbins linings are installed with full recognition of the chemical and mechanical requirements of the process involved. Stebbins designs, installs and maintains the proper corrosion and acid-resistant lining for every industrial need.

## **FOR 68 YEARS**

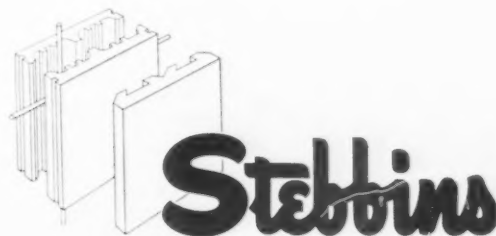
*Stebbins has been the leader in the design, installation and periodic inspection of tile tanks and corrosion and acid-resistant linings for process vessels.*



*New Riegel kraft pulp mill above; chip silos of Stebbins Semtile construction at right.*

SO MODERN is the new kraft pulp mill of the Riegel Carolina Corporation at Riegelwood, North Carolina, that some of the converting processes are efficient innovations, new to the industry. The forward-looking management of Riegel can well be proud of the completion of this fine new mill and of the model new community, carved from the forest, to house Riegel workers.

Chip silos, washer vats and regulators are of SEMTILE construction with all bleach plant and chemical plant linings designed and installed by STEBBINS... a total of 42 installations.



**SEMTILE, SEMPLATE, CARBON and ACID BRICK**

STEBBINS ENGINEERING and MANUFACTURING COMPANY  
Eastern Blvd., Watertown, New York

STEBBINS ENGINEERING CORP.  
Tower Bldg., Seattle 1, Washington

CANADIAN STEBBINS ENGINEERING & MFG. CO., LTD.  
Castle Bldg., Montreal, Canada

# RIEGELWOOD'S STORY

## COMPLETE DESCRIPTION OF RIEGEL MILL

ANOTHER AIR VIEW OF RIEGEL CAROLINA CORP., similar to one on our cover. This one shows how this new industry was hewn out of a North Carolina wilderness.

Few mills built and placed in operation since World War II have aroused as much interest as the modern pulp mill of Riegel Carolina Corp., in the new attractive community of Riegelwood, hewn right out of a wilderness near Acme, N.C. Designed as a specialty bleached kraft pulp mill to turn out the requirements of its parent company, Riegel Paper Corp., whose paper and glassine mills are located at Milford, Warren Glen, Hughesville and Riegelsville, N.J., the new mill is also of interest as the first commercial non-integrated pulp mill to put in a semi-chemical plant for the manufacture of market pulp; and one of the first large plants built in the U.S. to manufacture chlorine dioxide and to use it for high brightness bleaching.

Dr. Ward D. Harrison, vice president in charge of production, Riegel Paper Corp., and under whose guidance the mill was built, told PULP & PAPER that the North Carolina mill was built to manufacture some of the many special grades of pulp needed to manufacture the Riegel products, and that it is performing to these requirements. In addition it is turning out certain quantities of market pulps—specifically of high brightness grades.

Engineering for the Riegel Carolina mill was started in March 1950; the first equipment was purchased June 19, 1950 (before Korea) and several million dollars worth was ordered in the first week; ground was broken in Sept. 1950; the first digester was blown early Dec. 1951. This mill was designed for 200 tons and has already made slightly over 300 tons daily of some of the strongest, brightest pulp in the South. The semi-chemical plant, designed to run about 60 tons per day, went into operation in mid-April, and the chlorine dioxide plant and high brightness manufacture began in May.

The building arrangement at Riegelwood is a standard kraft pulp manufacture layout. What adds great further interest in this operation is that the equipment is of the most modern, and in some ways, such as instrumentation, no other plant in the country approaches its incorporation of the latest, and in some cases untested, ideas.

As J. D. Dailey, production manager, points out, the Riegel pulp dryer is the closest to a paper machine operation that he has seen in his extensive experience. Riegel, in the past, have been paper makers instead of pulp makers except for the fields of rag, rope and jute pulping. With this in mind, it is easy to see why they should consider their pulp dryer in the same light as they would a paper machine. Stock and water are mixed ahead of the fan pump and delivered in a completely mixed condition to the large



156 in. Impeco double press vacuum forming machine through an especially designed inlet and head box in order to lay down as perfect formation as possible. This, in turn, improves pressing and drying. White water and stock are both controlled accurately by instrumentation en route to the machine.

The 156-inch J. O. Ross Engineering Corp. dryer on the pulp machine is the largest built so far in this country. And the idea incorporated here—to bring the pulp sheet out over the cutter and layboy—has made it possible to permit cooling to retain brightness, in addition to the added advantage of keeping the sheet out of the way of broke removal.

The characteristics of hardwood cooked by the neutral sodium sulfite semi-chemical process make it most desirable for use in the manufacture of glassine. So the manufacture of semi-chemical at Riegel Carolina will not only make for more complete utilization of available wood supply, but it will also actually serve to raise the quality of Riegel glassine manufactured at the mills in the North. Acme will ship its semi-chemical pulp unbleached to the Riegel mills, who will then bleach and blend as they wish in the manufacture of their wide variety of products.

There are many things about the mill to attract attention and promote discussion. The completeness of instrumentation for automatic recording and operation has already been mentioned. There are approximately 200 panel-mounted instruments throughout the plant, and at least 100 other types, to make the most thoroughly instrumented operation in the country. There is also one of the greatest uses of vinylidene chloride material (Saran) in this plant. There are probably four to five miles of small diameter instrument tubing installed, in addition to a

great use of Saran-lined valves and piping at points where highly corrosive materials are being handled.

These are a few of the extras. What about the individual components of this fine operation?

### Water Plant

Although the water plant is considered simply as a duplication of the standard setup for municipal water purification, it is worthy of more than this passing consideration. Because of the high grades of pulp manufactured, control and treatment of water must be carefully handled. Water taken in from the Cape Fear river has a hardness of about 1 to 1 $\frac{1}{4}$  grains of calcium carbonate per gallon, and color runs 5 parts per million, or less—which makes for reasonably easy treatment.

The mill will use up to 65,000 gallons of water per ton of pulp—so the minimum daily requirements will approximate 13 million gallons. The water from the river is physically and chemically treated to (1) remove turbidity and sediment; (2) remove color; (3) adjust the hydrogen ion concentration or pH; and (4) sterilize or disinfect it. Ph is held constant to insure proper control and minimum use of chemicals.

Processes for purification consist of coagulation, flocculation, settling, filtration and chlorination. Alum is used as a coagulant, and just enough is added to produce floc and insure rapid formation and good clarification. When alum is first added, rapid mixing takes place followed by from 15 minutes to one hour of gentle mechanical agitation. This enables the floc to surround and clump together into larger masses the very finely divided turbidity and color compounds as well as some of the other micro-organisms. After floc has formed and agglomerated, it is allowed to settle. At intervals a valve is opened at



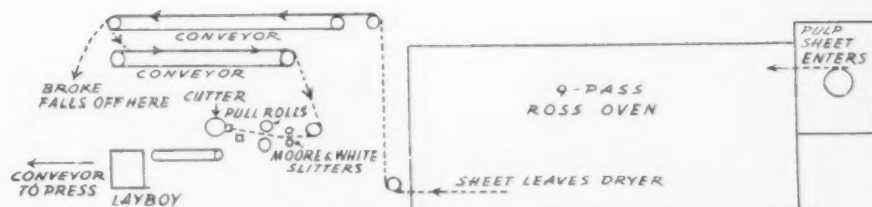
the bottom of the settling basin to allow settled floc to be drawn off to the sewer. In filtering, the water is drawn through a sand bed which retains the suspended material and gives a crystal clear effluent. The filter beds are washed periodically to remove impurities and allow a free flow of water.

Boiler feed water treatment is unique in that ion exchange resins are used to demineralize the water. The resins absorb both the cation and anion elements in the water to produce a water of distilled quality. This is accomplished by passing the water through two filter beds—one with basic exchange and the other with absorptive capacity. Sulfuric acid is used to regenerate the cation bed unit, and sodium hydroxide to regenerate the anion.

The water plant consists essentially of a raw water pump house; chemical feeding and rapid mixing equipment for adding chemicals to raw water; three flocculation basins with slow mechanical mixers; three settling basins; six filters; chemical feeding and rapid mixing equipment for adding chemicals to filtered water; a clear well and reservoir for treated water storage; and a mill service pump room.

Water enters the pump house through a canal leading from the Cape Fear river. There it is screened by means of a bar rack Link-Belt traveling screen; and strainers around the pump suction to remove types of debris and water life. Three Layne-Atlantic vertical turbine-type raw water pumps, each capable of pumping 5750 gallons a minute of water to a height of 78 feet, are used to pump the water to the main water plant. A Peerless vertical turbine-type pump is also located in the pump house, and is connected to the mill fire main system, and is also used to flush mud from the bottom floor of the pump house.

A solution of hypochlorite containing 30 grams per liter of available chlorine is added to the raw water stream immediately after the flow-rate controller at the water plant. Duplicate Milton Roy metering pumps capable of delivering 217 gallons per hour against a pressure head of



SIDE ELEVATION OF UNUSUAL OVERHEAD CONVEYING SYSTEM FROM PULP DRYER AT RIEGEL CAROLINA CORP.

40 lbs. per square inch are used for this purpose.

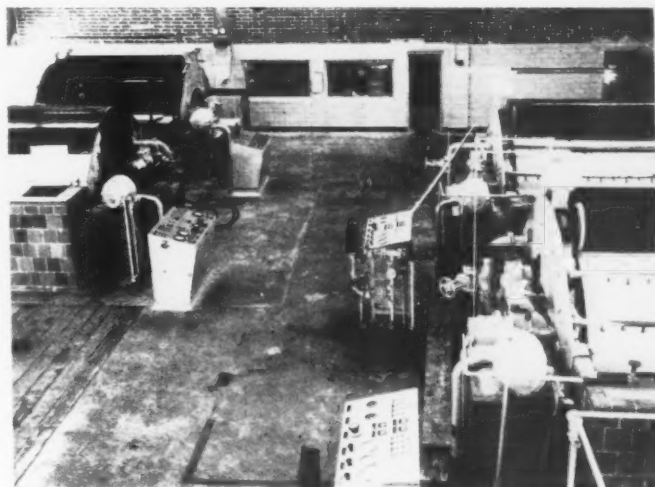
The water is then passed through a 24-inch Homomix unit where a solution of alkali and a solution of alum are metered into the water. This unit consists of two high speed rotating agitators inserted in the pipe line just prior to a 90-degree elbow. Alkali solution flows from a head tank into the Homomix by the upstream agitator. Alum solution is also added from a head tank but by the downstream agitator. The Homomix supplies the violent agitation necessary immediately after coagulant addition for proper floc formation.

This rapid mixing is followed by about 45 minutes of gentle agitation in the flocculators. There are three flocculators, each consisting of two rectangular compartments in series. The compartments are about 13 feet wide by 45 feet long, and 15 feet deep. They contain paddle agitators which rotate at 1½ to 2 revolutions per minute.

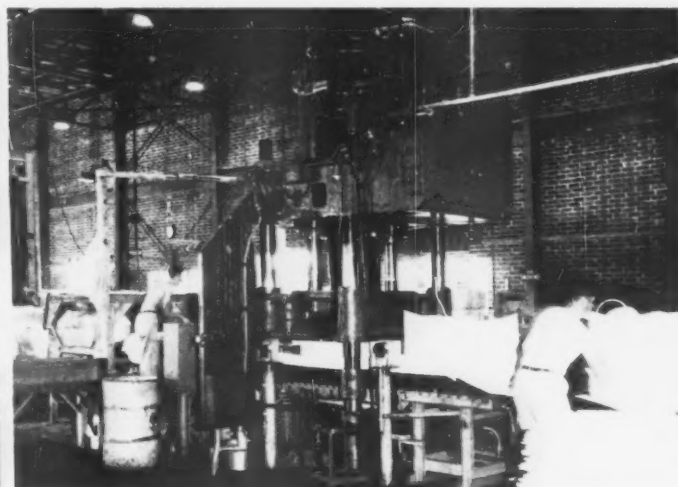
Following flocculation, the water enters the settling basins of which there are

three—roughly 140 feet long by 50 feet wide and 16 feet deep. These basins give about a 4½ hour holdup to the water, allowing time for the floc to settle to the bottom with the turbidity and color compounds. The settled mud is periodically flushed to the sewer through a drain in the bottom of each of the three basins.

Relatively clear water is decanted from the surface of the settling basins and flows through a series of flumes to any one of the six filters. The filters remove the suspended matter left and produce a crystal clear effluent. The filter beds are about 32 feet long by 20 feet wide and carry a 3¾ foot depth of water on top of the sand. The water enters the filter beds by overflowing five stainless steel wash troughs. As the water passes through the filters, the suspended material is caught and held by a mat of like matter that forms in the spaces between the grains of sand. As this mat grows larger and denser, flow of water becomes more and more difficult. To wash, finished water is pumped through the filter bed by a Worthington pump capable of 12,000 gals. per min. at a head of 60 feet.



GENERAL VIEW OF RIEGEL CAROLINA Mill's Bleach Plant (at left). Improved Paper Machinery Corp. supplied washers and some other equipment and cooperated in design. Stebbins Engineering & Mfg. Co. tile work on chests. Foxboro instruments are behind glass-window and tile-walled partition in background.



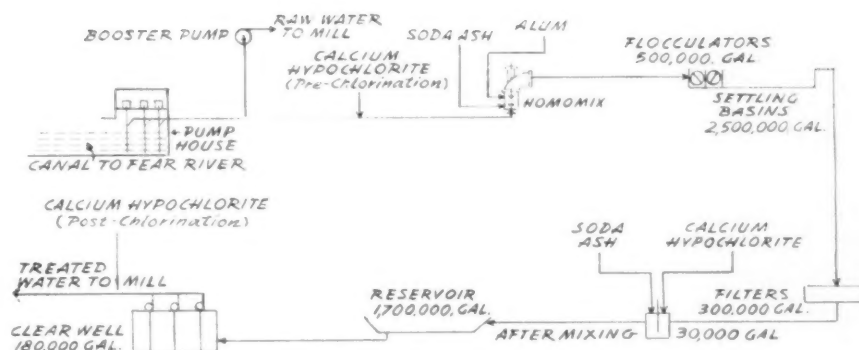
THIS VIEW AT FINISHING END of pulp mill operation at Riegel Carolina Corp., in Riegelwood, N. C., shows the 600 ton BALDWIN Press. This mill was built to supply special grades of pulps for Riegel products and also to supply market pulps of high brightness. It is one of the first to blend and bleach semi-chemical with kraft.

Clear effluent from the filters passes through an after-mixing chamber 13 feet by 7 feet wide and 9½ feet deep. A flash mixer extends vertically downward into the chamber and blends hypochlorite solution and adjusting chemicals with the filtered water. These chemicals impart proper residual chlorine of 0.5 parts per million parts of water and the proper finished water pH of 7.0.

From the after-mixing chamber the water passes into a 1,700,000 gallon open reservoir which is directly connected to a 180,000 gallon clear well. Three Worthington mill service pumps are located in the pump room over the clear well. The capacity of each is 5000 gallons per minute of water delivered at a head of 110 feet.

In addition to that mentioned, other equipment of importance to the water plant operation includes two Nash vacuum priming pumps which are used to keep the main operating pumps primed and to keep water in the 16-inch line from the filter effluent valve to the 30-inch effluent main when the filter is being washed. Feeding equipment for alkali and alum is supplied by Omega and consists of one bucket elevator for each chemical, two alkali feeders, and one alum feeder. The dry chemicals are put into hoppers on the ground floor and raised by bucket elevator to the second floor and discharged into the feeders. The feeders meter between 15 and 500 lbs. per hour of chemicals into a 76-gallon dissolving tank where it is dissolved in water to form a 2 to 6% solution. Alum solution is pumped to a 295-gallon lead-lined tank by means of an Allis-Chalmers pump with a capacity of 30 gallons per minute at a head of 20 feet. Alkali solution flows by gravity into a 145-gallon steel head tank. From these tanks the alum solution goes to the Homomix and the alkali solution both to the Homomix and to the after-mixing. Hypochlorite solution is manufactured in the chemical area of the pulp mill, pumped to the water plant, and stored for use in a 1950-gallon tank. It can be metered into the water directly after the raw water controller, in the after-mixing chamber, and into the mill

## RIEDEL CAROLINA CORP.'S WATER PLANT—FLOW DIAGRAM



service water line ahead of the venturi flow meter.

Foxboro instruments are used in the water plant for recording and controlling mixed and finished water pH; and for recording temperature of finished water to mill. Simplex instruments record raw water flow; clear well level; and finished and raw water flow to mill. Bristol supplied pressure recorders for finished and raw water. Roberts Filter Co. was main contractor in building the water plant.

### Wood Handling

Woodyard, woodroom and wood preparation at Riegel Carolina are under A. R. McBeth, a forester with experience at both Abitibi and North Carolina Pulp. His department must be prepared to handle inbound and outbound traffic to deliver about 100 cords of gum, for semi-chemical, and 400 cords of pine, for bleached kraft, to the pulp mill daily.

About 40% of the wood comes in by truck and 60% by rail from holdings of

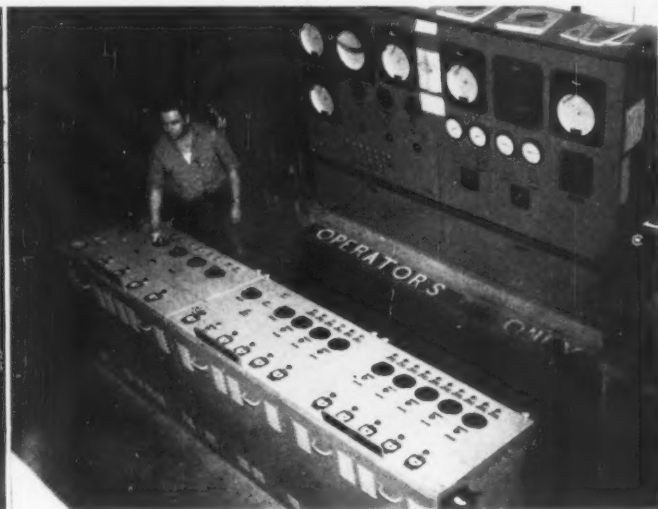
Riegel Woodland Corp. (see story in PULPWOOD SECTION) and private landowners. Wood is in 5-foot 3-inch lengths for rail handling, and 5-foot 6-inch lengths for truck, with diameters running from 4 to 18 inches. Because of the high grades of pulp manufactured, careful sorting is necessary to deliver wood to the chippers free of rot, burns, catfaces and other defects.

There are two Link-Belt conveyors leading from the woodyard to the barking drums. The two sections are each 360 feet long with Promal chain links with F attachments every 12th link. There is a rise of about 32 feet on this line from the receiving end to the barking drums.

There are two Fibre Making Processes, Inc., chain suspension 12 by 45 foot drums—one of dry type and the other wet type. In hardwood gum barking, because of the use of the semi-chemical pulp for bleaching and glassine manufacture, it is necessary to use sound wood and get it absolutely bark free. The wet barker is used for gum barking, and its excess capacity



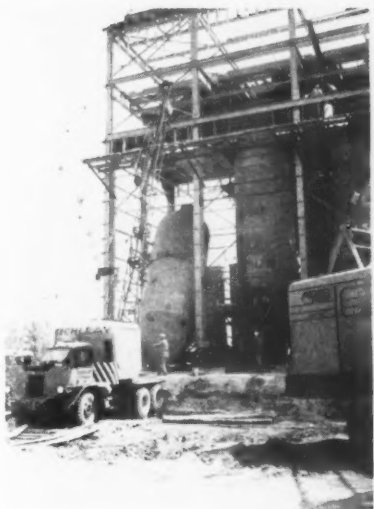
RIEDELWOOD, N. C.—new model town—is assuming shape of beautiful community as seen in this picture by PULP & PAPER. There are plenty of trees, curving boulevards and lots are large enough to provide play area and privacy.



GENERAL ELECTRIC panel at Riegel Carolina's Mill shown in this picture controls the Improved Paper Machinery Corp., pulp wet machine operation in the new plant at Riegelwood, North Carolina.



# Eichleay Installed 3,400 Tons of Equipment

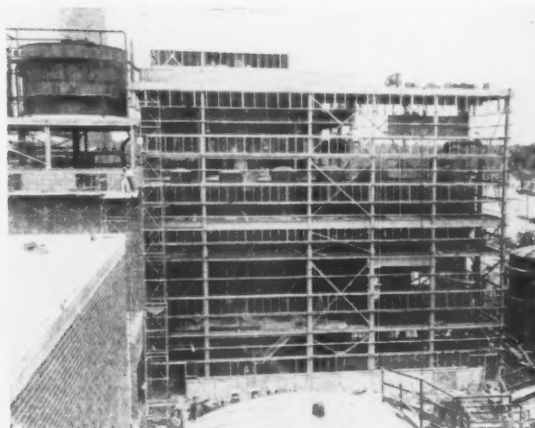
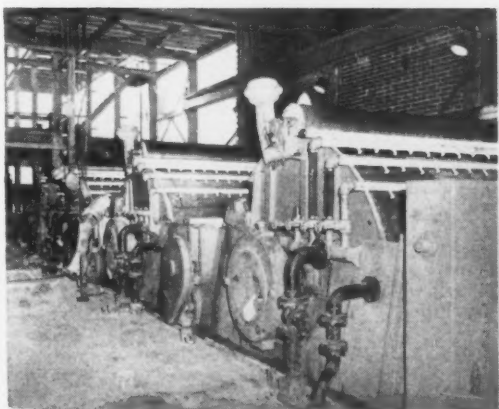


**at the new Pulp Mill of the  
Riegel Carolina Corporation  
at Acme, North Carolina**

The chore consisted of unloading and erecting a large Pulp Dryer and such other machinery as Pumps, Washers, Chippers, Digesters, Evaporators, Conveyor systems, Lime Kiln, etc.

## ***Eichleay Service is Flexible***

Whether the job involves the handling of a single unit, or the entire plant equipment, the construction of foundations, or the moving of structures, Eichleay service is prompt, efficient and economical—and performed with minimum interruption in production schedules.

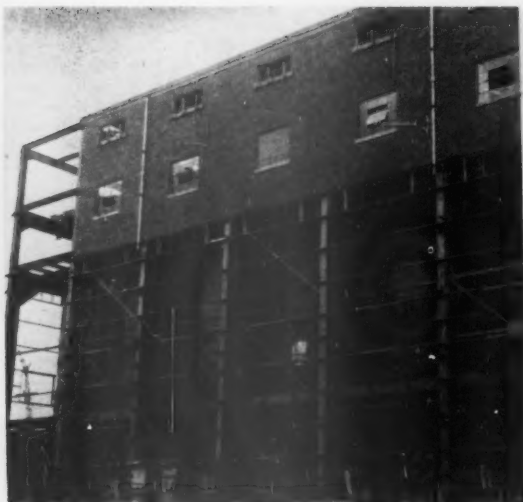


# **Eichleay**

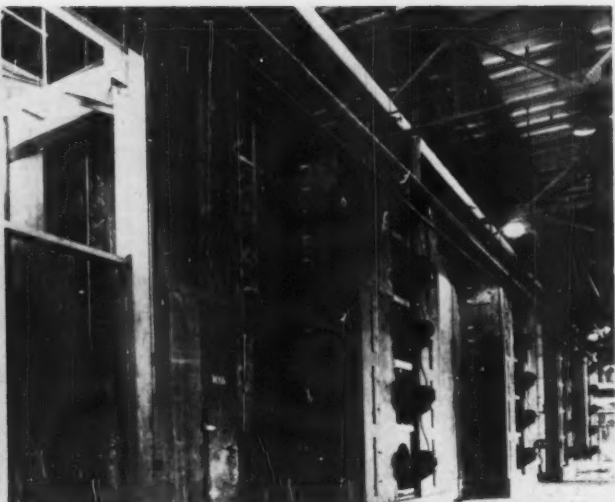
## **CORPORATION**

33 South 19th St., Pittsburgh 3, Pa.

681 Market St., San Francisco 5, Calif.



**FIVE GRAVER TANK & MFG. CO. DIGESTERS** installed at Riegel Carolina Mill are shown here in digester building. They are Lukens Type 316 Stainless Steel lined and are about 45 ft. high.



**J. O. ROSS ENGINEERING CORP.** Pulp Dryer shown at right, is conventional nine-pass over, 136 inches wide. The operation of the pulp drying plant is very similar to that of paper mill.

is also utilized for filling out the pine wood requirements.

From the drums there is a sorting conveyor made of 11 strands of Promal chain, and delivering wood to the Murray 88-inch chipper. Rejects are pulled off onto two conveyors for returning the non-specification wood to the drum barkers. Logs that need further preparation are sent down a log chute to a Moffit sawmill where oversize wood is sawed for handling, and defects are sawed out. A Lombard 72-inch chain saw is used at Riegel Carolina on the sorting deck.

Two Link-Belt drag conveyors with 82-foot horizontal centers are used to deliver bark from the drums to a 70-foot horizontal center Link-Belt belt-type feed con-

veyor. This rubber belt is 30 inches wide, of 4-ply 28-oz. duck made by Goodyear Tire & Rubber Co. It has a vertical lift of 15 feet to the drop of the bark into a Diamond Iron Works hog.

From the Diamond hog there is another belt feed conveyor to the storage hopper—this belt being 38-inches wide, with 138-foot horizontal center, and capable of handling 18 tons of refuse per hour.

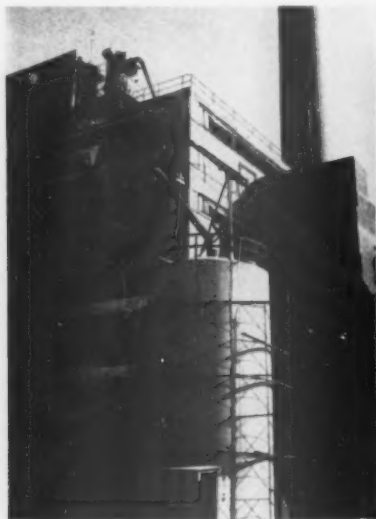
At the end of the sorting conveyor is the Murray 10-knife chipper with 18-inch throat, and driven by a 400 hp G.E. motor.

It is interesting to note here that all drives except the chipper and the refuse hog have herringbone reductions with two flexible couplings and a hydraulic coupling, to eliminate shock of start-ups. The

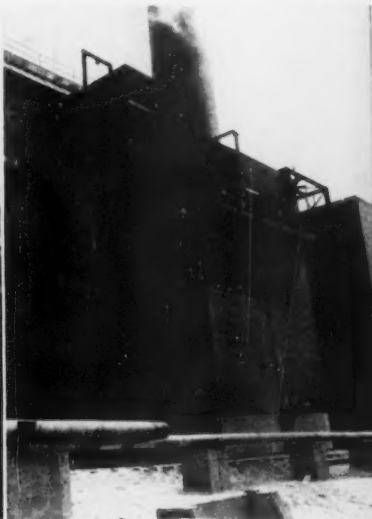
Link-Belt twin disc hydraulic coupling is coupled through the Falk flexible couplings to the Link-Belt herringbone gear reducers.

From the Murray chipper the chips drop to another 36-inch Goodyear rubber conveyor belt for delivery to the two O. Simpson Co. Rotex screens. These are 5 by 12-foot screens with top openings of 1½ inches, and ¼ inch at bottom for sawdust. Oversize chips deliver to a Carthage 34-inch re-chipper which has fins installed on the disc to act as an airveyor to convey chips back to the screens. The screens have a capacity of 18 cords per hour per screen.

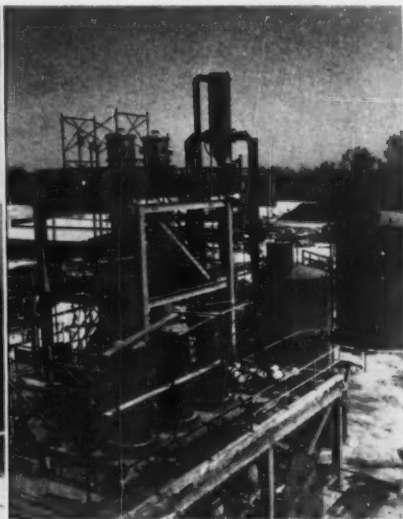
Sawdust is handled by a Link-Belt bulk flow conveyor with a capacity of 3½ tons



**MATERIALS HANDLING** was given important consideration at Riegel Carolina. Shown is Fuller Co. "Airveyor" for salt cake unloading system and storage silo with recovery boiler in background.



**RESEARCH CORP.'S COTTRELL Precipitator**—new wet bottom type—for collecting ash from cascade evaporator gases.



**OVERALL VIEW OF CHLORINE DIOXIDE PLANT** showing U.S. Stoneware absorber and reactor towers, Ingersoll-Rand steam jet refrigeration unit, and sodium chlorate and sulfuric acid tanks.

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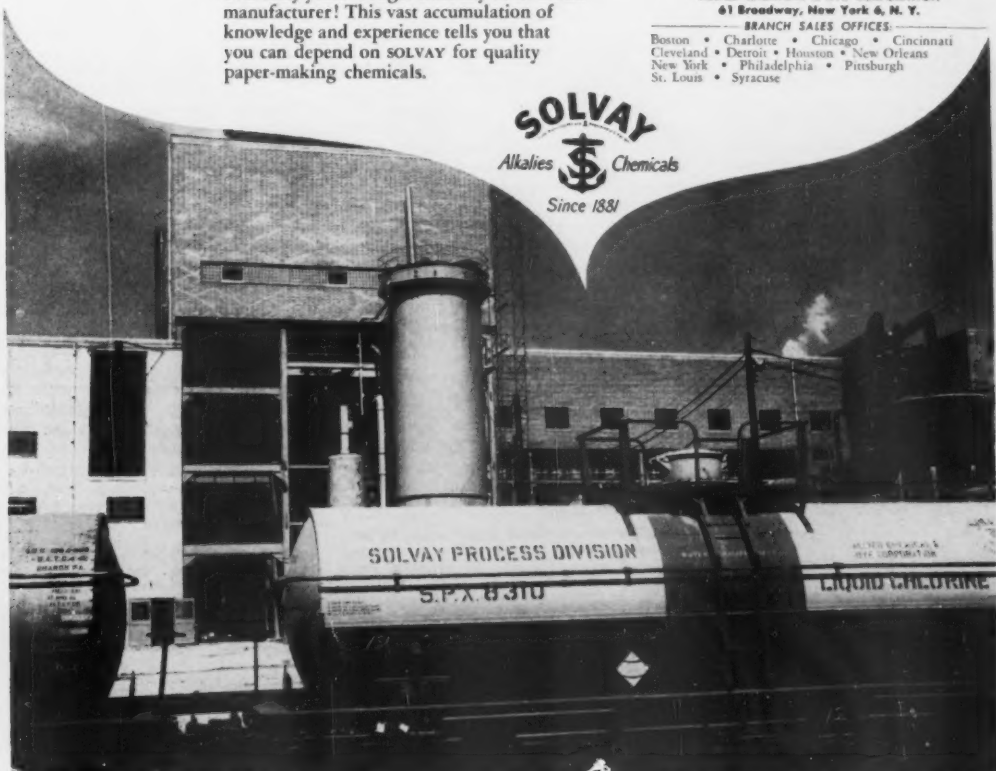
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Unloading Solvay Liquid Chlorine at Acme, N. C. plant, Riegel Carolina Corp.



**VIEW FROM RIEGEL BARKING DRUMS** showing the long conveyor feed line; the woodpiles on each side; and facilities for truck handling on the left and rail on right.

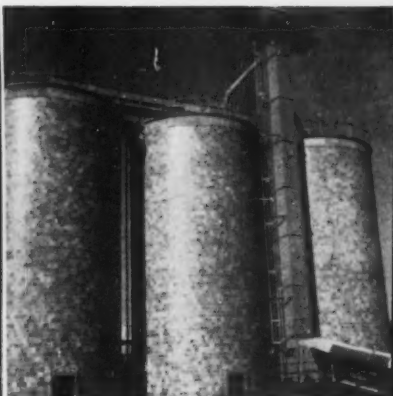
per hour. It has 90-foot horizontal centers with a 34-foot lift and is equipped with four Promal chains.

The screened chips travel a 30-inch wide rubber conveyor belt approximately 127 feet to the Link-Belt bucket elevators on the chip silos. These elevators deliver the chips 83 feet vertically to chutes which feed the three silos. The elevator belt is 42 inches wide, with two rows of 20 by 8-inch buckets on the belt, and moves at a speed of 525 feet per minute.

The three chip silos, built by Stebbins Engineering and Mfg. Co., hold 6½ digester loads of chips each. From the bottom of the silos there is an 84-inch Link-Belt apron feeder to deliver the chips to a 36-inch wide belt with 416-foot horizontal center which carries them on a 62-foot vertical rise to the top of the digester room.

Before starting this trip, chips are weighed by a Merrick Scale "Weightometer" for uniform charge on a bone dry basis to determine amount of white liquor and steam which will be required in the digesters to which they are being delivered. Tramp iron in the chips is removed by a Dings magnetic separator under which they pass as they enter the top of the digester building on the belt feed line.

A feature of the digester building is the automatic Link-Belt tank type tripper for the 36-inch belt on which the chips are delivered. This feed is operated from the



**VIEW OF STEBBINS CHIP SILOS** showing the Link-Belt Co. elevator to the top, and the spout leading to the silo feed conveyor.

digester control room floor. It is motor operated, complete with belt wiper, rail clamps, electrical controls and limit switches.

Equipment in the woodyard for handling pulpwood and refuse includes two P&H heavy duty cranes equipped with 96-inch Owens grapples; an International tractor equipped with a Hough Payloader for bark handling; and Caterpillar crawler tractors.

#### **Digester Room**

Six digesters are in operation at Riegel Carolina. The first five were built by Graver Tank & Mfg. Co., Inc., and have an inner diameter of 11 feet and stand about 45 feet high and they are fitted with Fibre Making Processes, Inc. circulating pumps and strainers. These five digesters have Lukens No. 316 stainless steel clad linings, ½-inch thick. The sixth digester was built by Chicago Bridge and Iron, and utilizes old rimming steel which is pure metal and does not have stabilizing chemicals. This is the steel that stood up in some cases as long as 25 years without lining.

#### **Kraft Washing**

Digesters are blown into Foster Wheeler heat recovery blow-tanks with Impco Propeller Agitators in the bottom to control dilution. Stock is then pumped to the Impco de-knotter, with knots going out to knot basin as waste material. Three 8 by

**CLOSE-UP OF LIGHTNING MIXER**, made by Mixing Equipment Co., on top of No. 3 causticizer at Riegel. Equipment used for agitating slurry in bottom of tank.



**LINK-BELT CO. CONVEYOR** leading from the chip silos to Riegel digester room.

10 Impco washers are used for washing, with the strong black liquor from first washer being pumped to a foam tank where the soap is skimmed off. Washing temperature is held at 160°F., with stock consistency into brown stock chest about 3 to 3.2%.

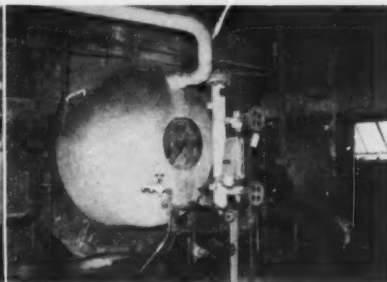
#### **Screening**

There are five primary and two secondary flat screens in the screen room, manufactured by Improved Paper Machinery Corp. These screen lines consist of 2-14 plate screens perline equipped with stainless steel plates made by Magnus Metals. Rejects from the screens go to a knot basin, while the accepted stock is thickened on an Impco 6-foot 6-inch by 14-foot valveless decker before being dropped through a DeZurik consistency regulator to the stock storage chest ahead of the bleach plant.

#### **Bleach Plant**

The Riegel Carolina bleach room is one of the show places of the industry. The plant is tile wainscoted, with a false Transite board ceiling with indirect lighting. Glass block windows let in light and add to the modern lines of what is a most beautiful room. In addition, fixed panes of clear glass are set in the glass block panels to provide outside vision and eliminate any danger of a "penned-in" feeling for the operators. There are console cabinet controls by each bleach washer, and

**ACME COPPERSMITH & MACHINE CO.** sulfur burner at Riegel Carolina Mill.



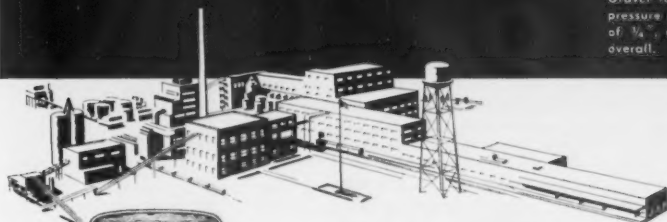
**TOP OF COMBUSTION-ENGINEERING** recovery furnace showing main steam drum and superheater outlet at Riegel.



# GRAVER builds 5 Stainless-Clad Digesters—



One of the five stainless clad digesters fabricated by Graver for the Riegel Corporation. Built for working pressure of 126 PSI, each has a total shell thickness of  $\frac{3}{4}$ " an inside diameter of 11', and stands 48' overall.



A leader in paper making since 1862, the Riegel Corporation produces more than 600 different kinds of paper, with glassine and greaseproof papers its largest lines. The recent addition of a pulp mill permits Riegel to integrate its every operation from tree to finished paper.

## for New Riegel Pulp Mill at Acme, North Carolina

The vital part these five digesters play in Riegel's new pulp mill demanded fabrication of the highest order. Top efficiency, long, dependable service, and minimum down-time were "musts". By intensive research and painstaking fabrication, Graver's goal was not only the fulfilling of these requirements, but in addition the elimination of other operating problems inherent in the usual digester. These very real evidences of Graver ability are worth remembering whenever fabrication in steel or alloys is your need.

### GRAVER TANK & MFG. CO., INC.

EAST CHICAGO, INDIANA

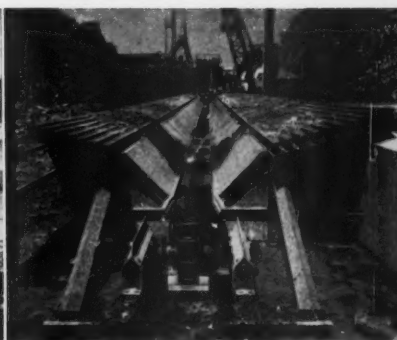
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**VIEW OF WOODLOT AND WOOD HANDLING** system taken from top of Stebbins chip silos. Sorting line and barking drums are in foreground, with good picture of incoming wood handling in the background.



**CLOSE-UP OF TAIL PULLEY** on Link-Belt long conveyor showing railroad rails on unloading aprons, and water ports which supply lubricating water and initial cleaning for logs for Riegel.



**FIBRE MAKING PROCESSES** barking drums are used at Riegel. There are two chains suspension 12 x 45 ft. drums—one of dry type and the other wet type.

plenty of working space around each piece of equipment and down the center of the floor so that the incentive for keeping things "spic and span" is provided.

Principal equipment of the bleach plant was supplied by Improved Paper Machinery Corp. and includes six 8 by 10-foot tile vat high density bleach washers. Two of these are stainless steel, one is rubber covered, and three are of cast iron construction. All bleach plant piping is 316 stainless, except the chlorine dioxide lines which are Saran or brick lined.

Stock flow to the bleach plant is measured through Impco stock meters. The chlorine tower is Impco circulator-type, with fan-type agitators in the bottom of the tower. Stock is chlorinated at about 3½% consistency and with 1½ hour retention time.

#### Chlorine Dioxide Bleaching

Main center of interest in the bleach plant, of course, is the sixth stage bleaching with chlorine dioxide. In the normal five stages of bleaching Riegel has been able to manufacture pulp averaging almost 80 G.E. brightness without loss in strength. With chlorine dioxide it will be possible to get 88 brightness or better for the high-brightness requirements needed in the manufacture of specialty grades of paper for Riegel's New Jersey mills.

The Solvay Process Division of Allied Chemical & Dye Corp. developed the proc-

ess which has been installed by Riegel for chlorine dioxide bleaching. The process is intended to give a very fine fiber with low degradation, and with high color and long stability. The cost of sixth stage bleaching with chlorine dioxide runs several dollars a ton, but is well justified by the results obtained.

Since chlorine dioxide is poisonous, explosive and extremely corrosive, its use presents some chemical engineering problems beyond those normally experienced in pulp and paper manufacture. Riegel's engineers and suppliers exercised considerable ingenuity, therefore, in the construction of this plant and its equipment.

The chlorine dioxide tower is 17 feet 6 inches inner diameter, and 51 feet 9 inches high. Made of ½-inch steel, it is lined with a special resistance membrane over which is 3 inches of acid brick laid in acid sodium silicate cement to make a total thickness of 3¼ inches. A Semplate lining 3 inches thick is applied to the chlorine dioxide seal leg. All stainless piping is used throughout Grinnell-Saunders valves were Saran-lined by Dow Chemical and supplied through the Charleston, S.C., office of Saran Lined Pipe Co. A Kel-F diaphragm is used. Armored ceramic pipe, "Microflex," made by Maurice Knight, Akron, O., connects the high density pipe with chlorine dioxide mixer.

In the process, stock from the second hypo washer (fifth stage) falls through

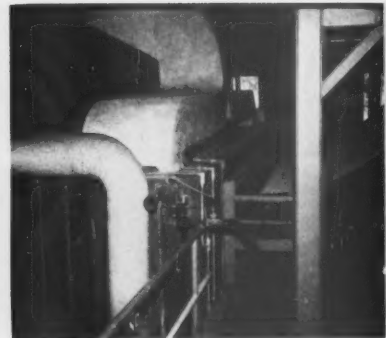
a 45-foot drop leg to an Impco high density stock pump, which delivers it to the chlorine dioxide mixer. The chlorine dioxide comes into the mixer in a water solution, and after mixing the stock is forced up a leg to the top of the tower. Into the bottom of the tower sulfurous acid is introduced to neutralize the corrosive effects of chlorine dioxide through pipes and the washer. From the tower the stock goes to the stainless steel washer, and then into the bleached stock chest.

Steam supply for the tower is 50-lb. process steam, and the start-up temperature in the bleach tower is 160°F. Tower time for the chlorine dioxide bleaching is 240 minutes. There is no recovery of the bleach liquor from the washer.

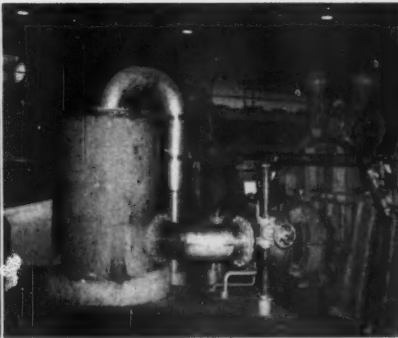
#### Semi-Chemical Plant

As has been mentioned earlier, this is the first commercial non-integrated pulp mill to put in a semi-chemical plant for the market pulp. The cooked semi-chemical is blown into conventional tank with a somewhat larger agitator in the bottom. This pulp is then pumped to a drainer-conveyor where the liquor is sent back to the system and the drained pulp chips are fed by screw conveyor to two Bauer refiners. Refining is just enough to break up the chips without separating or cutting the fibres. From a small storage chest the stock is pumped to one Impco 8 by 10 washer, and then screened over 4

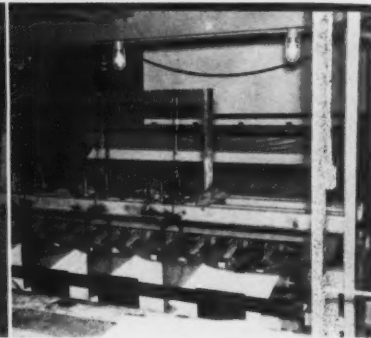
**AT RIEGEL CAROLINA** the pulp machine is on level above the dryer. This shows pulp sheet entering Ross oven dryer, with vent to economizer at left.



**PULP MACHINE FLOOR** showing the white water separator tank and Impco cylinder mold with pre-dryer in background.



**END VIEW OF MOORE AND WHITE** layboy with cutter in background. Pulp sheet comes out dryer over the top of cutter allowing time for cooling for better color retention.



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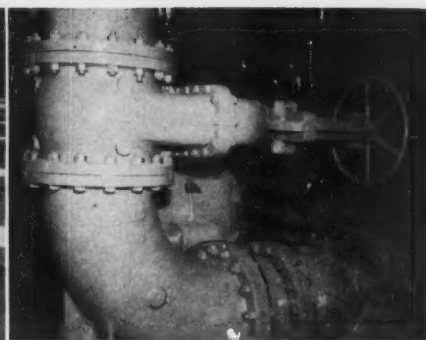
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MONTREAL—TORONTO



**PUMP STATION FOR WATER PLANT** on Cape Fear river for Riegel Mill. Water from canal enters through Link Belt travelling screen-type grating over v-7 intake. Station is equipped with three



Worthington pumps, 5000 gpm head, 110 feet; and Peerless fire pump, 1500-gal. capacity. **FLOCCULATION PITS** and settling basin at Roberts Co. water filtering plant at Riegel Carolina Mill.



**O. I. C. VALVE, CRANE CO.** prefabricated pipe, and discharge end of pump to 24-inch mill water header supply line in Riegel water plant.

primary and 2 secondary flat screens. Accepted stock goes to a valveless decker, and rejects back to the Bauers. From the stock chest, the semi-chemical stock is dumped to the Kamy wet machine for wet lapping.

#### Pulp Drying

The pulp sheet for kraft pulp is formed on a 156-inch Impco feltless wet end consisting of a cylinder mold, two presses and a pre-dryer. Then the sheet enters the 156-inch J. O. Ross Engineering Co. dryer—the largest built so far in this country. Although larger than models described previously in **PULP & PAPER**, it is the conventional 9-pass Ross oven.

The wet machine is on a level above the Ross dryer, so that the pulp sheet enters the dryer from the top. On the dry end, the sheet emerges from the bottom and is led straight up to a conveyor above the layboy and cutter. This handling is said to lower the temperature before cutting and baling, to help color retention, and also keeps the sheet out of the way when there is a holdup on the cutter, thus helping to eliminate broke.

On the Moore and White cutter the sheet is slit into 5 widths and cut off into a pulp sheet size of 28 by 31 inches. Matthews layboy and conveyor take the sheets to the 600-ton Baldwin press for pressing. Wrapping and tying is the last operation. The bales are here stacked four high and loaded directly into

rail car by lift truck. Bales are palletized when stored at the plant.

Alongside the Ross oven is the Kamy wet machine for handling semi-chemical pulp. This is a 136-inch machine re-built for this job. Semi-chemical will be shipped about 55% air dried. A Matthews conveyor from this machine ties in with the system from the kraft machine so that the one Baldwin press handles the production of both.

#### Chemicals Manufacture

**Sodium Sulfite**—An Acme Copper-smithing & Machine Co. sulfur burner is used to make  $CO_2$ . The flow of the sulfur dioxide is split so that part is absorbed in the Peabody absorber to form sulfurous acid for the bleach plant. Gas from the absorber is passed through a U. S. Stoneware ceramic tower with raschig ring and absorbed in soda ash solution for making neutral sulfite liquor.

**Chlorine Dioxide**—Raw materials for this manufacture are sulfuric acid, sodium chlorate, and methyl alcohol. The plant for its manufacture was engineered and designed by Solvay, who developed the process. Sulfuric acid and sodium chlorate are added in series through three reaction towers with a mixture of air and methanol vapor being blown in at the bottom of each tower. As the vapor passes up through a downward flowing stream of chemicals, chlorine dioxide is liberated from the reaction and passes from the top of the reactors into one of two absorption towers which are located in parallel. Here it is absorbed in water to form a solution of chlorine dioxide.

The plant is designed to manufacture about three tons of chlorine dioxide per day.

A feature of the system is a steam jet refrigeration unit which cools the absorption water to 50° F. This system was made by Ingersoll

Rand, and has a Foster Wheeler cooling tower. The reaction absorption towers were built by U. S. Stoneware; the reactor circulating pumps by Duriron Inc.; the heat exchanger by National Carbon; the chlorine dioxide and spent liquor receivers are acid brick lined by Stebbins; the castings were made by Grinnell-Saunders and were lined with corrosion-resistant saran by Dow Chemical and supplied through the Charleston, S. C. office of Saran Lined Pipe Co. The chemical unloading and transfer feed pumps to bleach plant are Ingersoll Rand; the chemical feed pumps are Goulds; and all instrumentation was supplied by Foxboro.

**Bleach Liquor**—Riegel Carolina is one of the two plants in the country making bleach liquor by continuous process, a process developed by Kimberley-Clark. Chlorine is first mixed with a lime slurry in a Durchlor ejector, and then pumped to the mix tank. The mix tank overflows into a clarifier where the sludge settled to the bottom and clear bleach liquor continuously overflows into one of the three concrete storage tanks. Sludge is continuously pumped from the bottom of the clarifier by an Oliver sludge pump into a wash tank where it is washed with water. Water and sludge move counter current, so sludge is actually washed twice by the same water. Sludge from the second wash tank discharges into the sewer.

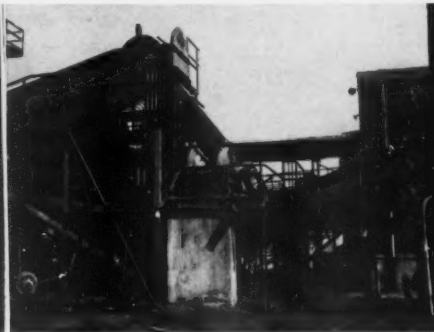
Pebble lime, which is slaked in an Omega slaker, is pumped to the ejector with a Milton Roy meter pump. Lime and soda ash are unloaded from rail cars with a Fuller Co. "Airveyor" system, one of three in use at Riegel Carolina, with soda ash being stored in solution form and lime in storage hopper.

**Causticizing**—Green liquor from the storage tank is fed into a green liquor clarifier where the dregs are removed and the clarified liquor overflows to the slaker. The dregs removed from the bottom of the clarifier are pumped by Dorco suction pump to the dregs washer. Any chemicals carried over with the dregs are

**FALK and LINK-BELT** flexible coupling typical of drives on all yard conveying equipment.



**DIAMOND REFUSE HOG** with feeding and take-off conveying systems.



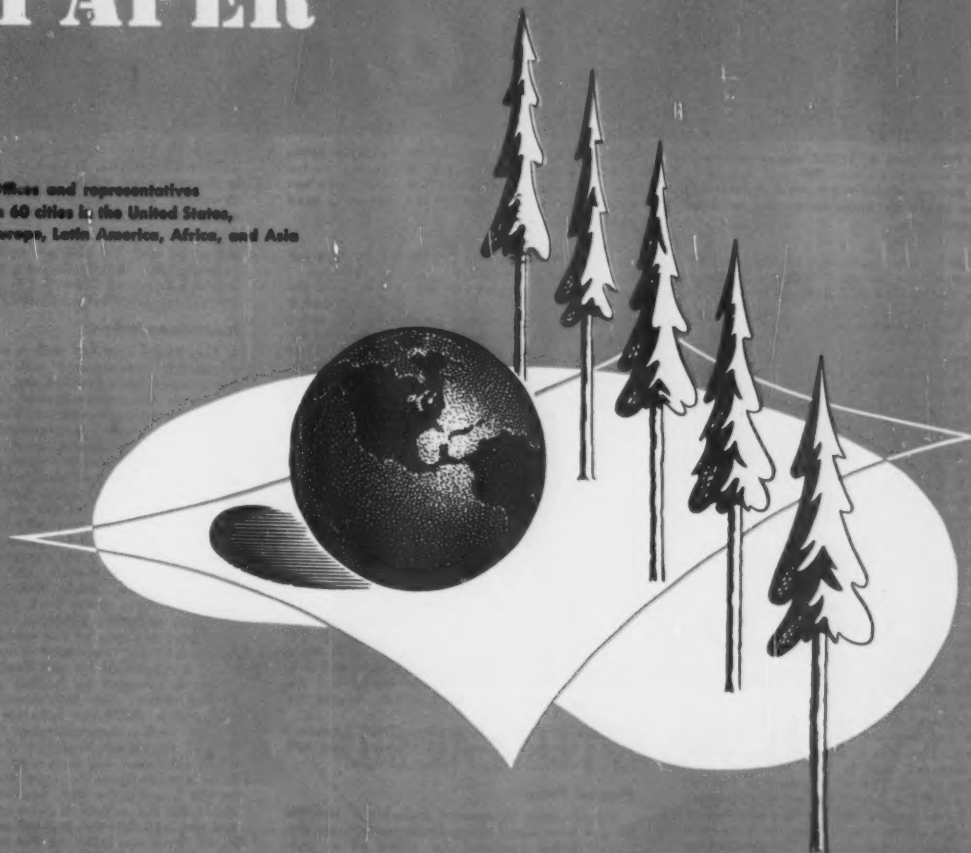
**MURRAY 10-KNIFE MAIN CHIPPER** with 18-inch throat in Riegel Plant.





# WOOD PULP PAPER

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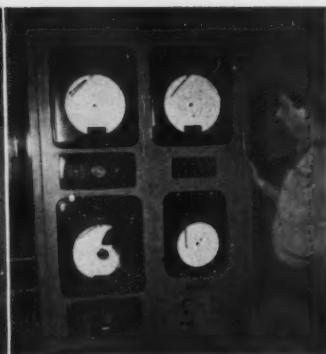
**BULKLEY, DUNTON**  
ORGANIZATION  
295 MADISON AVENUE, NEW YORK 17, N. Y.



**DIGESTER CONTROLS AT RIEGEL** are as automatic as any in country. Foxboro DP cells tapped to top and bottom record differential pressure to show gas space so liquid level can be read from control room.



**ANOTHER PART OF AUTOMATIC DIGESTER CONTROL** are these B. F. Perkins & Son motors for the hydraulic cylinders which automatically operate blow valves. One of two motors is used as a standby unit.



**OPERATOR RUSSELL ANGE** at Riegel Mill checks panel board for No. 3 digester. At bottom right is digester blow valve control, and various instruments show gas-off temperature, steam and circulating pumps pressures.

washed out by counter-current washing and the clear solution overflowing the dregs washer is stored in the weak wash tank or used in the mud washing thickener.

Green liquor overflowing the clarifier is first heated in a Dorco heater and mixed with re-burned lime from the kiln in the Dorr slaker-classifier. The resulting slurry is pumped to the causticizers—three in series—where the green liquor is converted to white liquor. Liquor leaving the causticizer goes to a white liquor clarifier where the mud is separated from the liquor and the white liquor overflows to storage for use at the digesters. Mud from the bottom is pumped to the 2-stage mud washing thickener where any chemicals carried over are reduced to a minimum by further washing. The clear overflow from the thickener is sent to the weak liquor storage for use in the recovery operation, and mud from the thickener is pumped from the bottom and sent to mud storage in the lime kiln.

In addition to the Dorr Co., Inc., equipment mentioned, other equipment in the causticizing plant includes: Mixing Equipment Co. Lightening mixers; Worthington pumps; and Morris Machine Works pumps (see photos).

**Lime Re-Burning**—Mud is pumped from mud storage to a slurry feed where it goes to the Bird centrifuge. Solids are raised from about 30 to 60% and then fed into the Traylor kiln by screw feed. The kiln is 215 feet long and 8½ feet in diameter, and is fired by mechanical atomization of oil. This oil is raised to 210° F. by a Coen Oil Co. heater before it is fed into the kiln. Lime leaving the kiln is conveyed by Link-Belt Co. chain conveyor to the re-burned lime storage tank for use in the causticizing plant.

**Recovery**—The recovery plant is designed for handling 750,000 lbs. of dry solids per 24 hours. The plant consists of Goslin-Birmingham 6-effect evaporator with surface condenser; D. J. Mur-

ray cascade evaporator; Research Corp. precipitator; and Combustion-Engineering furnace.

Black liquor enters the evaporators from the brown stock washers at about 15% solids and is released to the cascade evaporator at about 50% final concentration. The evaporators are designed to handle 440 gallons per minute. They operate under a 26½-inch vacuum, and 50-lb. steam pressure. Liquor Bau-me is controlled by steam flow and pressure.

A small flow of black liquor is pumped into a Research Corp. wet bottom precipitator where any salt cake or carryover from the furnace passes with the gases into the Cottrell precipitator. From 97 to 98% of the solids are removed and mixed with the black liquor flowing through the precipitator, which then carries on to the Murray cascade evaporator which raises the liquor concentration to 68 to 70% solids.

From the cascade the liquor enters a mechanical flow box where any additional salt cake needed to make up for losses in the chemical operation is added. This liquor is screened and passes into a secondary heater where the temperature is raised to 200° F. before entering the primary heater which raises the temperature to 230° F. It is then fed into the furnace for conversion to smelt, and the steam generated goes to a 600-lb. header for use through the mill.

The C-E furnace is equipped with Diamond Power Specialty Corp. IK blowers, and salt cake is unloaded by a Fuller Airveyor.

#### Power Plant

Power plant equipment includes a 100,000 lbs per hour Combustion-Engineering type VU power boiler equipped for either oil or pulverized coal firing; a 52,800 lbs per hour Combustion Engineering refuse boiler with spreader stoker boiler and Hoffert bark feeding machine; Allen Shermanhoff ash disposal system; General Electric 7500 kw turbo-generator, extract-

ing at 50 and 150 lbs. per square inch steam pressure; and Bailey control equipment on all boilers. American Blower Co. fans are used throughout the power plant and recover furnace.

#### Instrumentation

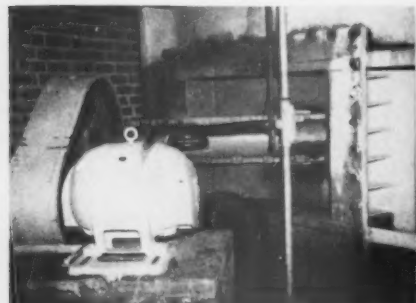
The Riegel Carolina mill is one of the most completely instrumented mills of its kind. As has already been pointed out, the plant contains over 200 panel-mounted instruments. The major instrument contractor, Foxboro, supplied 187 panel-mounted instruments of which 82 were controllers mounted on 27 different cabinet assemblies. About five miles of Saran instrument tubing has been used, and approximately the same amount of copper tubing—just to give an idea of the extent of this use.

The types of measurement made by Foxboro at Riegel Carolina for indicating, recording and controlling purposes are temperature; temperature difference; pressure and vacuum; flow rates and totals; level; density; conductivity; pH; consistency; motor load; torque; rpm; and oxidation reduction potential (orp).

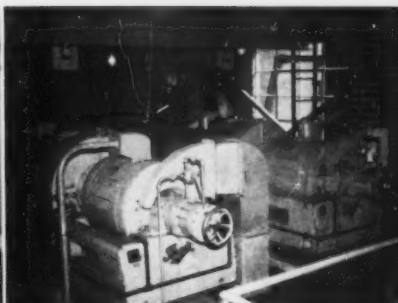
A good example of the extent of controls is supplied by the evaporator system. Here everything is controlled by one Foxboro instrument which is actuated by boiling point rise. The boiling point rise instruments records the temperature difference between the liquor going out of the evaporator and the vapor going out. If the liquor becomes thin, the boiling point difference will drop—and this in turn will close a valve from the soap separator tank to let the liquor get a little heavier. As this valve closes, the liquor level in the soap separator tank will rise and this rise in level is caught by the liquid level controller on the tank which will shut down on the total flow to the evaporators. The total flow to the evaporators goes to No. 5 and No. 6 stages, and this is ratioed by a controller according to the setting on the recorder.

Another example of controls is on the digesters

**IMPCO PULP CIRCULATOR** at bottom of chlorine dioxide bleach tank in new Riegel Mill.



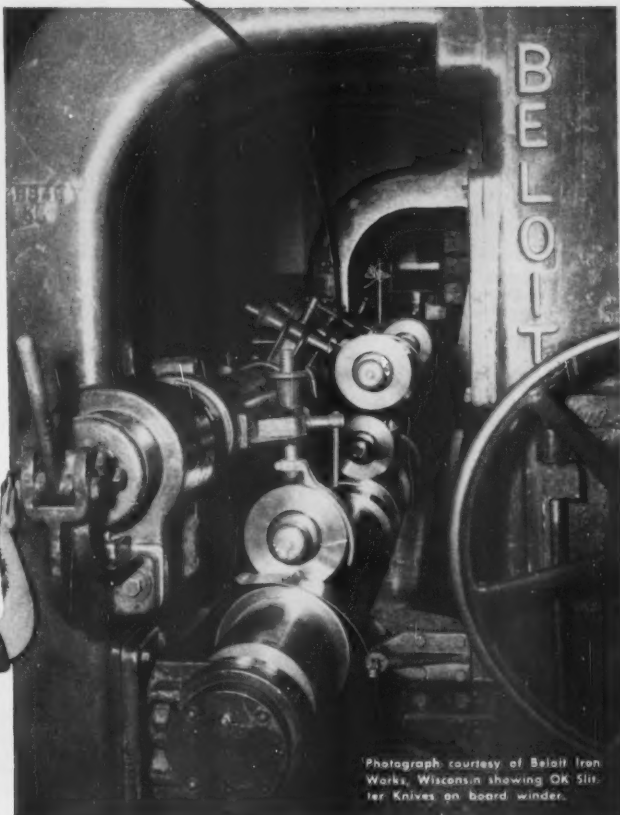
**TWO BAUER REFINERS** for handling semi-chemical refining. Drainer conveyor is on level above, with feed lines shown at rear of refiners.



**INTERESTING USE** of equipment and materials at Riegel—Darling check valve; Foxboro flow control valve hooked up with No. 136 stainless piping and Saran instrument tubing on fifth stage bleach line.



it's  
**OK**  
let'er go!



Photograph courtesy of Beloit Iron Works, Wisconsin showing OK Slitter Knives on board winder.

cut costs with **OK SLITTER KNIVES**

In Company after Company building machines for paper manufacturers or converters, OK Slitter Knives are first choice.

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**GO WITH OHIO GREEN**

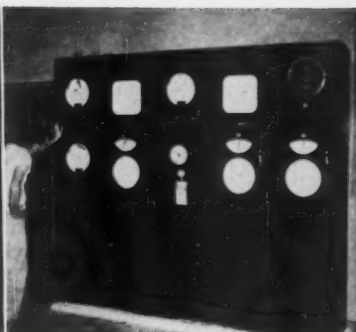
**THE OHIO KNIFE CO.**

CINCINNATI 23, OHIO

Manufacturers of  
OK SLITTER KNIVES,  
CHIPPERS, TRIMMERS,  
REVOLVING CUTTERS, etc.



**T. B. COLE, PLANT OPERATOR**, at control station in water filtering plant. Automatic controls handle water flow, and back-washing for filters.



**MAIN CONTROL PANEL** at water filtering plant showing Harold Priest at Foxboro, Bristol and Simplex recorder controls.



**FILTER BED ROOM** in Riegel water plant showing basins at right, and Roberts Filter Co. controls at center.

where No. 1 and No. 5, handling semi-chemical, have Foxboro differential pressure cells to record liquid level of the digester. The DP Model 40 cell is tapped on the side of the digester, one at the top and one at the bottom. The pressure differential between the top and bottom is recorded to show the actual gas space in the tank. These same DP cells are used on all liquor tanks, blow tanks, steam flow to digester, and steam flow to bleach cell.

Still another digester control operates to open and close the blow valves automatically. There is a 4-way control valve on the operating panel in the digester room. Throwing the control switch activates a B. F. Perkins hydraulic oil pump which operates the cylinder on the Yarnall-Waring cylinder to open the digester blow valve.

There is also a remote Foxboro control at the bottom of the digesters which can be operated from the main digester panel to remove condensate when chips are steamed before liquor is added.

These are but a few examples of the many controls effected throughout the operation that bear testimony to the completeness of instrumentation at Riegel Carolina.

**RIEDEL CAROLINA CAUSTIC MAKING PLANT** with Fuller pebble lime unloading system in foreground; Traylor kiln at left; and Dorr causticizing equipment.



**EXTERIOR VIEW SHOWING KAMYE-TYPE** chlorination tower at left of bleach plant; bleach and caustic tanks; blow tank; and digester building. Stebbins brick foam tower at left.

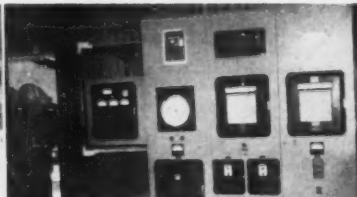
#### Other Features

**Construction**—The main buildings are of jumbo brick construction, and some 3050 tons of structural and 1650 tons of reinforcing steel were used by the building contractors. The roof over the pulp dryer is also of interesting construction—known as a 20-year Barrett-Bond roof. It consists of a 4-ply layer of 15-lb. Barrett Vaporseal felt immediately over the roof members; Armstrong Cork Co. 2-inch cork insulation; another layer of 4-ply felt; a flood coat of pitch; and a final 1-inch layer of slag. American Pipe & Construction Co.'s "Amercoat" was used 100% in outside painting of the buildings.

**Transportation**—Both Seaboard Air lines and Atlantic Coast Lines railroads service the Acme, N. C., area. The Cape Fear river at Acme is also navigable, so that it is possible to make shipments by lighter to Wilmington for transfer to freighters at that port some 20 miles away.

**Motors**—General Electric motors are used throughout the plant, being several hundred in number and ranging all the way from the 400 hp motor driving the chipper to 1/4 hp motors for lighter work.

**M. A. PACE IS AT CONTROLS** of Traylor lime kiln panel board at Riegel Mill.



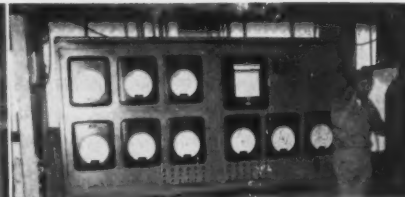
**Pumps**—Some of the variety of pumps used in the mill have already been mentioned in the main body of this story. Ingersoll Rand was the major pump contractor for the entire job, including water, liquor and stock. Morris Machine Works supplied some of the liquor and slurry pumps; Allis Chalmers some of the stock pumps; and Goulds Pumps, Inc., some of the special chemical pumps. Nash Engineering Co., through Clark & Vicario, furnished vacuum pumps.

**Laboratory**—The laboratory, under the direction of Albert Wiley, technical director, is one of the best equipped in the industry. Located under the screen room it is approximately 35 by 50 feet in size, with an upstairs chart and storage room.

**Mill Effluent**—To prevent pollution of the Cape Fear, Riegel's mill effluent is caught in a gigantic settling basin covering 190 acres. Constructed by Grannis and Sloane of Fayetteville, N. C., more than 200,000 cubic yards of earth was moved for the basin. An effluent structure is located close to the river where valves are manually operated to release the settled effluent to the river.

(Continued on page 106)

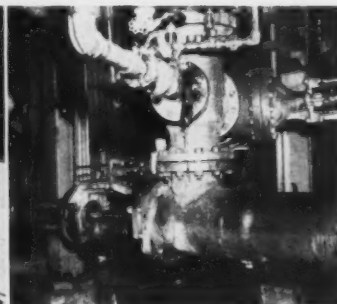
**FOXBORO INSTRUMENTS** in evaporator panel board room of Riegel Carolina Mill. Operator is E. R. Lee.



**OPERATOR SAM HULL** is shown at General Electric controls in the screen room of new Riegel Mill.



**YARNALL-WARING NO. 2 BLOW VALVE** at bottom of one of the semi-chemical digesters at Riegel. This valve is operated automatically from control room floor.





Riegel **DOUBLES** in economy

with 2 FOSTER WHEELER SYSTEMS

#### 1. DIGESTER BLOW STEAM HEAT RECOVERY

For heating clean pulp wash water, Riegel chose the low-cost, high-heat-recovering liquid-to-liquid system with scale-resistant, non-corroding tubes. The system is capable of heating 755 gpm of clean water from 75 to 160 F. A feature of this system is the non-plugging condenser which allows clear blow-through without back pressure.

#### 2. TURPENTINE RECOVERY

For the added revenue in recovering 2 to 4 gallons of turpentine from each ton of pulp and the economy of fuel saved through heat recovery in the condenser, they chose an FW system consisting of a cyclone separator, condenser and gravity separator.

This new installation by Riegel-Carolina Corporation at Acme, N. C. confirms once again not only the sound economics of turpentine and digester heat recovery but also the continued acceptance of Foster Wheeler equipment by pulp mills.

Perhaps our experience in heat and turpentine recovery can be of assistance to you. If so information describing these Foster Wheeler systems will gladly be sent on request.

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## THE COMPLETE STORY OF A LONG PROGRAM OF MODERNIZATION

# The "New" Deferiet, N.Y., Mill

Final steps are being taken on a post-war program which will complete the modernization of the original St. Regis Paper Co. mill at Deferiet, N.Y., where extensive changes have taken place which should not be overshadowed by the important expansions and improvements which have been effected in other areas of the St. Regis domain.

As a matter of fact, the Deferiet changes have been taking place, and are continuing, so gradually that they may not be recognized as part of a program. But something like \$6,500,000 was projected as on expenditure in the post-war modernization project which has seen production of groundwood printing papers at Deferiet raised to 310-320 tons per day; sulfite pulp output to 100-110 tons; and groundwood to about 150 tons.

As important to the St. Regis scheme of things as the increase in production is the fact that new equipment and methods have made it possible to upgrade the printing papers. So the improvements have achieved (1) an increase in quantity of papers produced; (2) a better coated quality for commercial printing; and (3) a greater variety of papers for the market.

### Deferiet Background

Deferiet is as old as St. Regis—or the other way around. It was the original mill of the company, built on an investment of \$2,000,000. Work on the mill started in 1899 with building of a 4400-foot canal across a bend in the Black River in upper New York State to divert water for power. The three original water wheels still remain within the plant area (see photos), and are still generating their 12,000 hp, although they are now owned and operated by Niagara Mohawk Power Corp. for supplying utility power.

The Deferiet mill, which began operations in Oct. 1901 was designed by Frank A. Hines. The paper mill had a rated capacity of 100-150 tons, with the sulfite mill producing 40 tons daily.

From the timberlands point of view it is interesting that St. Regis started operations in 1901 owning 80,000 acres, and according to its 1951 annual report over two million acres of timberlands are now owned or controlled by the company.

Deferiet operated as a newsprint mill from 1901 until about 1920 when the first major changeover began to convert it to manufacture of groundwood printing papers. Along with the plant at Bucksport, Me., it is the principal supplier for St. Regis of machine-coated supercalendered and other groundwood printing papers, and specializes particularly in manufacture of directory and catalog papers. Approximately 900 employees now take part in the enlarged operation at Deferiet.



THIS AIR VIEW of the St. Regis Pulp and Paper Mill at Deferiet, N.Y., provides ample evidence of the work already done in making a modern mill out of the company's first mill. New pulpwood high

stacker can be seen in left background; new groundwood mill at top center; and new machine room and coatings preparation building at left center.

### Wood Handling

Wood supply for Deferiet comes principally from the Godbout tract owned by St. Regis, comprising about 200,000 acres of spruce, hemlock and balsam along the north shore of the St. Lawrence. Pulpwood is brought in by boat to Waddington, just above Deferiet, is hooped and loaded on rail cars for transportation to the mill. Hoops are of  $\frac{3}{4}$ -inch reinforced steel rod and will handle about 1.03 cords of 4-foot wood per bundle. Pulpwood is kept stored in these hooped bundles until ready for use in order to facilitate handling.

Center of interest in the modernization program in the woodyard is the new high stacker which handles peeled wood for the groundwood mill. Built by Chas. T. Main, Inc., engineering firm of Boston, the stacker receives wood by hoist from rail cars, and delivers it by a 300-foot conveyor to an elevation of 100 feet for dumping on the pile. The stacker is built in shape of a "T." At the crossing of the "T" are hoppers into which the hooped peeled wood can be dumped by hoist and conveyed to the main lift to the top of the pile. Several rail cars can be pulled alongside this system for unloading. From 70 to 80 cords of wood an hour can be handled by this unit.

The conveyor in the stacker was sup-

plied by Chain Belt Co. and has size S-132 links. It is driven by a Louis-Allis 60-hp squirrel cage motor with a W. A. Jones Foundry and Machine Co. herringbone speed reducer.

Hoisting equipment in the woodyard includes an Industrial Brown Hoist crawler-type crane; one Industrial Brown Hoist crane on rails; one Link-Belt crawler; and one Koerhing crawler-type. All are equipped with Owen Bucket Co. orange peel-type grapples.

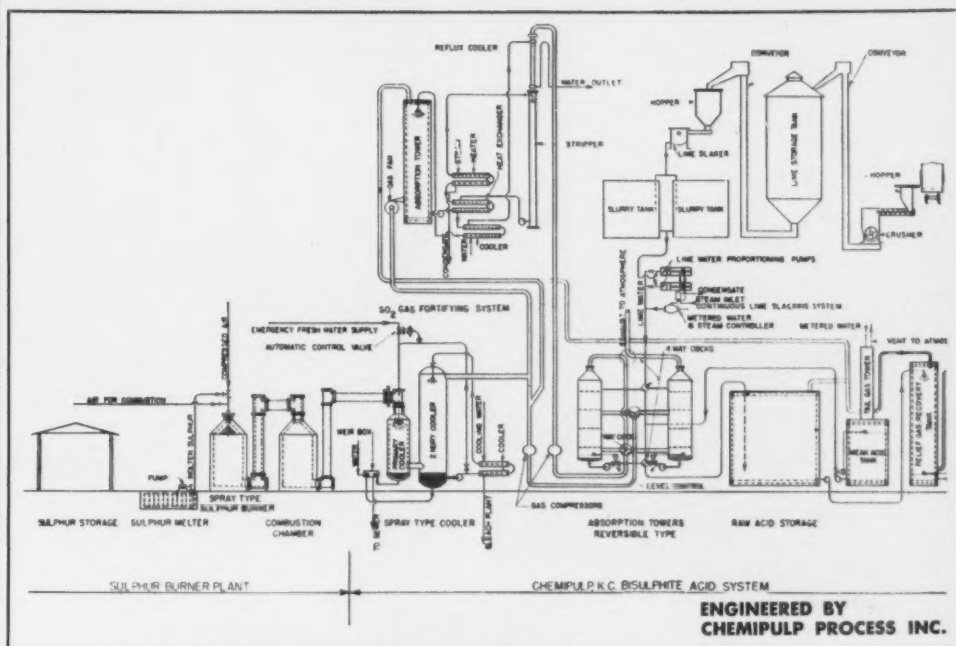
In the wood room, equipment now includes a 12 x 45 Fibre Making Processes dry-type drum barker. In the summer months production from this new barker runs about 20 cords per hour, while production is limited to about 8 cords per hour during the winter. From the barker there is a new conveying system of 60-inch wide Goodyear 8-ply heavy duty rubber belting, with rejects being received by a Chain Belt A-132 conveyor.

Other equipment here in the renovation program includes two new rotary disc woodpeckers made by Williams & Wilson Ltd., of Montreal, Canada, for extra wood cleaning; a Carthage Machine Co. hydraulic splitter for reducing large logs to the 16-inch maximum which can be handled by the chipper; and a Merrick Weightometer for continuous automatic

# THE CHEMIPULP - KC

## SULPHITE IMPROVED ACID SYSTEM

### AT ST. REGIS PAPER COMPANY'S DEFERIET MILL



Chemipulp Process Inc. takes pride in its contribution to the modernization program at Deferiet and salutes St. Regis Paper Company for the increase in production and quality of St. Regis papers.

The Deferiet installation of the complete Chemipulp-KC Acid System, including the Independent Recovery System, Bubble Cap Absorption Towers, and the Chemipulp-KC Spray Type  $\text{SO}_2$  Gas Cooler is the first of three Chemipulp-KC Acid Systems that have been designed and installed by Chemipulp Process Inc.

#### NEW DEVELOPMENTS BY CHEMIPULP PROCESS

Circulating Systems	Chip Pre-treatment	Chip Distributor
Waste Liquor $\text{SO}_2$ Gas and Heat Recovery	Recovery Towers	
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For further details on the Chip Distributor or any of the other Chemipulp Process developments, write for booklets.

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weighing of chips to the bins.

### New Type of Chipper

Just recently placed into operation—and one of the first in the country to be installed—is a 10-knife 84-inch Norman chipper. It is driven by a 350 hp General Electric motor and can chip up to 40 cords of wood per hour. This chipper was designed by Sigmund Norman, of Portland, Ore., and built for St. Regis by Carthage Machine Co. It was tested on a pilot plant scale by St. Regis for almost a year before the production model was placed in operation.

Thomas Gerace, general pulp superintendent for St. Regis at Deferiet, says that tests and early production indicate that with the new chipper it may be possible to eliminate screening. Terrific vibration is eliminated. It is said to produce chips with almost no sawdust and of uniform size. Knives are set in helically ground face plates. Each knife cuts wood in such a manner as to guide it to the succeeding knife at uniform rate of feed.

### Groundwood Mill

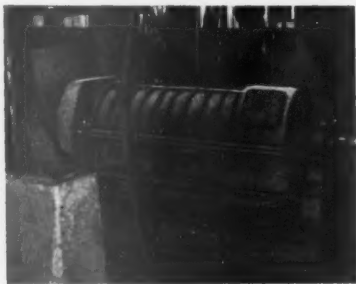
In the groundwood mill the effects of the modernization program are such that capacity has been increased to 150 tons per day at the same time that labor requirements per shift have been reduced from 28 men under the old system to 4 men under the new. This has involved, of course, some very considerable changes.

Major change in this mill has been the replacement of 28 Great Northern 3-pocket grinders with 8 Roberts-type grinders made by Appleton Machine Co. These grinders are made to handle the 4-foot peeled wood and have a stone size of 54 inches wide by 60 inches in diameter. Norton Co. and Carborundum supply the special stones. These are 80-hour burring cycle stones, and produce groundwood with 80 degrees freeness according to Schopper-Riegler tester.

For the groundwood mill there has been supplied a 12 x 22½ FMP wood washer with water flotation system for floating the wood to the grinders. Water in this system is re-circulated, so there is little



D. A. "PAT" MORAN, top left, is Resident Manager of St. Regis operations at Deferiet, N. Y. DR. K. A. ARNOLD, top right, heads newly-centralized Research and Development Department for the company at Deferiet. THOMAS GERACE, lower left, is General Pulp Mill Superintendent, and BERNARD J. KOZIOL, lower right, is Plant Engineer.



## HAUG REFINERS

—are **SAVING** more than  
**700 TONS** of GROUNDWOOD,  
SULPHITE and KRAFT REJECTS **EACH**  
**DAY** in the U. S., Canada and Europe  
... This Haug Refined Stock is marketed  
at the same price as virgin pulp, and the  
ANNUAL DOLLAR SAVING in wood,  
alone, is OVER SIX MILLIONS.

### ANTON J. HAUG

64 TAYLOR ROAD, NASHUA, N. H.

water waste, and the water flume saved considerable conveyor cost, Deferiet men say. Following the grinders are two type-4 Anton J. Haug Co. refiners for handling rejects; one Bird Machine Co. Jonsson knoter; and three centrifugal-type Improved Paper Machinery Co. knotters.

The groundwood mill utilizes the peroxide bleaching process which was developed in cooperation with Dupont in Norfolk, N.Y., in 1942 when that mill was owned by St. Regis. Deferiet uses the batch rather than the continuous process as the batch system adequately keeps pace with the mill's requirements for bleached groundwood.

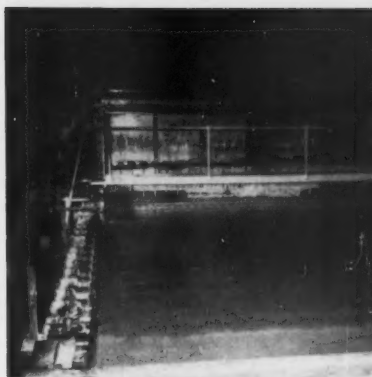
New to this mill is a control laboratory right in the groundwood operations where tests are taken every two hours on freeness, classification, mullen, tear, tensile and bulk number.

### Coating Plant

Almost, but not quite, complete is the plant begun in 1947 for filler clay, alum make-up and coating preparation. There are two Stebbins tile storage tanks for dry clay with 600-ton capacity each, and equipped with a Fuller Co. "Airveyor" system for unloading from cars and delivering to the coating plant.

In the coating preparation room is a W. A. Melchior traveling weigh-lorry for handling and weighing dry materials; stainless steel tanks made by Struthers Wells for cooking, slurry mixing and storage; Ty-Rocket screens for screening slurry and finished coatings; and two smaller tanks for blending ammonium stearate. The slurry tanks have dual radial and single radial agitation, and cookers have scrapers for removing material from out-





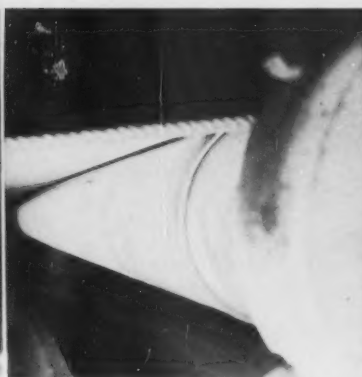
LOOKING BACK TOWARD the headbox across the Fourdrinier wire (at left) is the new section of the Bagley & Sewall 204-inch machine running at 1000 feet per minute on directory papers.

side shell of the tank. Taylor-Fulscope controllers with cam arrangement are used on the coating preparation cookers for predetermined temperature schedule.

With installation of a new size press on the machines, it is expected to mix size in this coating plant, too.

#### Acid Plant

The new acid plant is one of the prized accomplishments of the Deferiet people and contains much new equipment and employs many new methods. The plant uses the bulk lime—magnesium base proc-



MOUNT HOPE MACHINERY CO. expander roll (middle view) was an addition at Deferiet to the coating section of its No. 4 machine.

ess, and the special setup for the operation at Deferiet was engineered by Chemipulp Process Inc. (Ed. note—This, of course is still a calcium pulping system at Deferiet and is not to be confused with the magnesium soluble pulping process used only by Weyerhaeuser in one mill).

Lime is crushed and stored in a steel lined tank until ready for use. It is then delivered by hopper to a continuous Infilco-type lime stacker with a capacity of 1500 lbs. per hour. There are two Milton Roy lime pumps for pumping filtered lime slurry to the absorption tower. One other



CAMERON MACHINE CO. No. 20 winder (at right) is another new installation on No. 6 machine at the St. Regis Mill.

tower is used simply as a standby. These pumps are equipped with special Cleveland Worm Gear Co. reduction units.

Sulfur is melted in a pit at floor level, and is pumped by Hasco pump from there to the new rotating Carthage burner. There are two spray-type cooler towers for  $SO_2$  gas. The primary cooler is 14 feet high with a 30-inch inside diameter with acid resisting brick lining by Stebbins Engineering & Mfg. Co. The secondary cooler is 24 feet high with a 5-foot inside diameter. This type 316 stainless steel tank has been lined by Stebbins with tile cross partition rings, and there is a countercurrent flow through it.

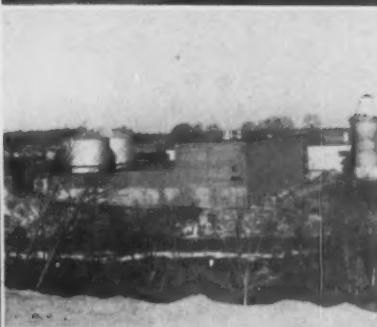
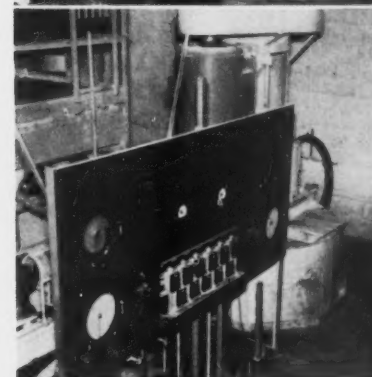
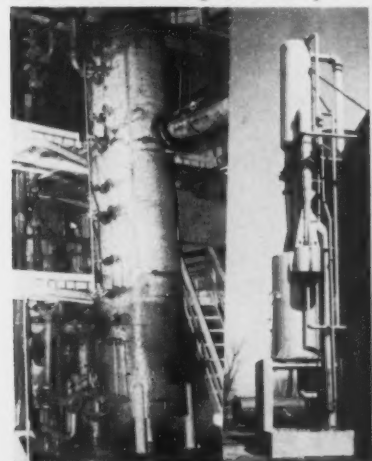
Interesting installation here is a No. 7 Nash blower with type 316 stainless steel lining which has vacuum intake for receiving gas from the secondary cooler and pressure discharge for delivery to the absorption towers. It is driven by a G. E. variable speed motor with v-belt drive.

There are two absorption towers of the reversible self-cleaning type each 24 feet high with 5-foot inside diameter. They are stainless steel towers and have four trays in each through which gas spreads out through the bubble caps to flow evenly through the tower.

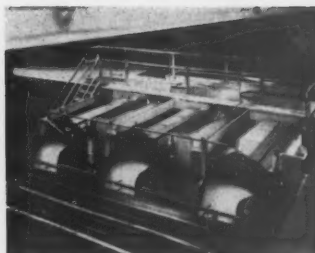
The independent recovery tower is 25 feet high with 5-foot 6-inch inside diameter. It is 316 stainless steel tower and packed with tile cross partition rings.

Water for the acid plant is cooled to 50° F. by an Ingersoll-Rand barometric cooler with a 250-ton water cooling capacity in the summer months. All tanks for this plant were made by Process Equipment Co., Somerville, Mass., and Leeds & Northrup was the supplier of the automatic  $SO_2$  control system.

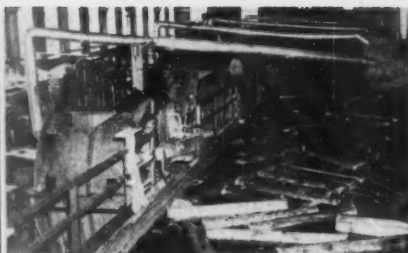
Being installed is an 18 x 16-inch Tyler-



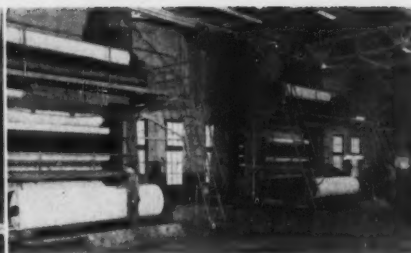
VIEWS ON LEFT are at new Acid Plant of St. Regis Paper Co., Deferiet, and on right—views showing clay silos. Top views, l to r: Two 24 ft. high Chemipulp-K.C. stainless steel absorption towers in acid plant; a 250-ton Ingersoll-Rand barometric water cooler for acid plant; Stebbins Engineering tile dry clay silos of 600 tons capacity each with Fuller Airveyor system on top. Below—left: Taylor-Fulscope controller for predetermining temperatures in cooking tanks in rear, in coating preparation room. Below—right: New building for No. 6 machine with Stebbins clay silos showing at right. Metal tanks at left are for sulfite and groundwood storage.



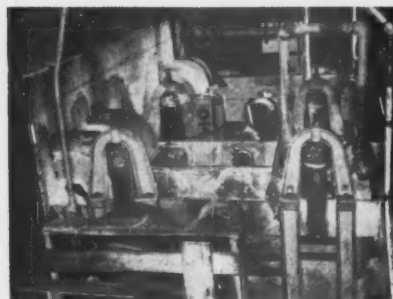
THESE 3 BIRD MACHINE CO. Screens (left) are ahead of No. 6 Machine at Deferiet, N. Y., Mill of St. Regis, in a new building for machine and stock preparation system.



ELEVATED FLUME FEEDING PULPWOOD (middle) to a battery of 8 Roberts Grinders in Deferiet, N. Y., Mill's renovated Groundwood operation. Appleton Machine supplied grinders.



VIEW OF 3 TEN-ROLL SUPERCALENDERS (right) made by Appleton Machine for a new finishing department in St. Regis operations at Deferiet which handle stock from No. 1 Machine.



INCLUDED IN NEW EQUIPMENT in the St. Regis Sulphite Mill are these two Jonsson knotters (left). This is part of a system for using screening which formerly entered the river.



NEW MACHINE SHOP equipment includes this Forrel Birmingham two-wheel roll grinder. Being ground is king roll from stock on No. 6 machine weighing 25 tons with 216-inch face and 30-inch diameter. Edward Drake is operator.



THIS S. C. ROGERS KNIFE GRINDER (at right) can handle five 18-inch chipper knives at one time. The machine uses Rogers 8-segment stone grinders. John Siedlecki is the operator.



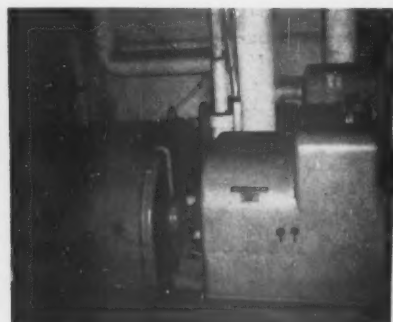
THIS HIGH STACKER handles 60-70 cords an hour for St. Regis Groundwood Mill at Deferiet, N. Y., was engineered by Chas. T. Main Inc. Conveyors by Chain-Belt.



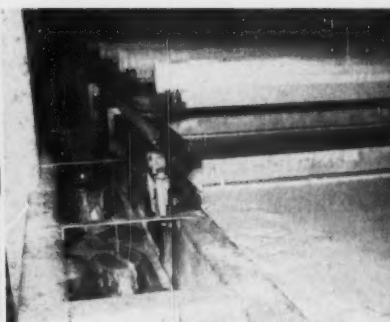
MIDDLE VIEW shows Owen Bucket Co. grapple, orange peel type, as used on all cranes in Deferiet Mill yard.



CHAIN BELT CO. provided new conveying system here leading to mill operations at Deferiet. Groundwood mill at right.



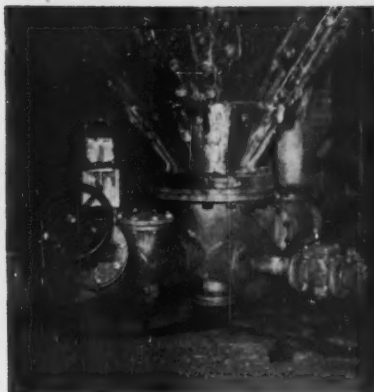
THIS WESTINGHOUSE 850 lb., 6000 kw turbine (at left) is one of two units operating in the rebuilt power plant at Deferiet.



FOUR SVEEN-PEDERSEN Savealls (middle view) have been given new tile vats in the machine room basement of the old building.



ANOTHER NEW DEPARTMENT at Deferiet is the sheet department which was formed in 1948. A recent addition is this 100-inch Clark-Aiken rotary cutter (at right).



**CAPACITY OF SULFITE MILL** was increased to 110 tons at St. Regis Mill by addition of 14x45-foot Chicago Bridge & Iron digester. This shows Hardy valve setup at bottom.



**E. D. JONES MAJESTIC REFINER** (in middle) is part of complete new preparation equipment at Deferiet in the brand new No. 6 machine room.



**THIS NEW SAVALLA** supplied by Castle and Overton has 1700 g.p.m. capacity at 12,000 lbs. solids per 1000 gals.

Hammer screen for screening grit and stones from lime slurry, to complete the acid plant.

#### Sulfite Mill

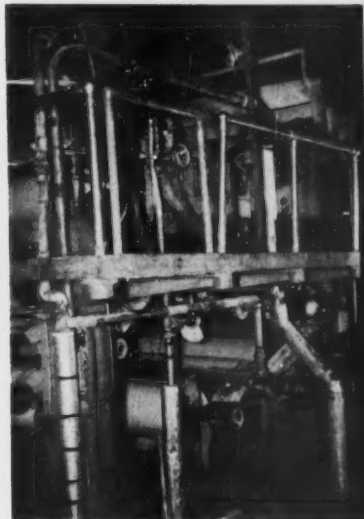
The sulfite pulp mill has been enlarged from 75 to 100 tons per day by adding one digester to three previously in use. This is a 14 x 45-foot Chicago Bridge & Iron Co. digester with acid brick lining, riveted on a turntable in very close quarters in the plant.

Along with this came a new chip vat with 3-digester capacity; 2 new Johnsson knotters; and 8 x 12-foot Impco brown stock washer for handling all washing after blowing; and a just-installed Bauer style 400 size 36 refiner for sulfite screenings. Previously screenings were sold in lapped form or were lost into the river.

#### Machine Room

Two new beaters have been installed

**FACTOR IN UPGRADING** production at Deferiet Mill was installation of Faerber Coaters, at left, for machine-coated book grade: on No. 1 and No. 4 machines.



and the other old beaters were being replaced with new tile-lined mixers as fast as possible. Of the machines themselves, the lineup is as follows:

**No. 1 Machine**—146-inch trim, normal speed of 500-600 feet per minute; running catalog and book grades. Equipped with a Faerber coater for machine coated stock.

**No. 2 Machine**—141-inch trim, normal speed 800-900 f.p.m.; lightweight directory and catalog paper.

**No. 3 Machine**—111-inch trim, normally 500-600 f.p.m.; all grades.

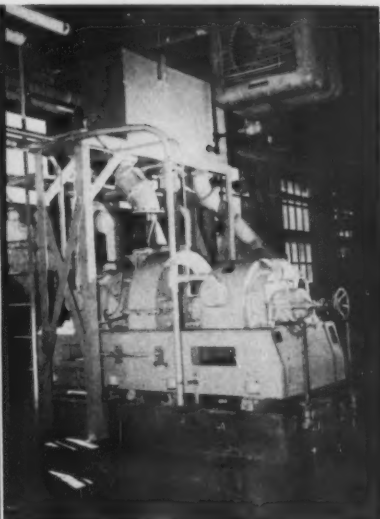
**No. 4 Machine**—136-inch trim, normally 500-600 f.p.m.; catalog and book grades. Faerber coater for book grades.

**No. 5 Machine**—116-inch trim, normally 500-600 f.p.m.; catalog and directory grades.

**No. 6 Machine**—204-inch trim, normally 1,000 f.p.m.; directory papers.

No. 6 machine is in a separate new building built to accommodate the machine

**THIS BAUER BROS. REFINER**, on right, for sulfite screenings just went into operation at the Deferiet Mill on day of PULP & PAPER's visit.



and all necessary stock preparation equipment. The machine is a Bagley & Sewall formerly in operation at Ogdensburg, but with completely new Fourdrinier section built for it at Deferiet. Since this machine runs 100% of the time on directory paper, its system is kept independent of that for other machines.

Equipment in the system includes a 5000 lb. Stebbins tile-lined beater; an Oliver United Filters 8 x 16 filter; an E. D. Jones Majestic beater driven by a 350 hp Allis-Chalmers motor; three Bird Dirtecs; and three Bird screens. The machine itself is equipped with a J. O. Ross Engineering Corp. hood; Farrel Birmingham calender stack; and Cameron winder.

Four other machines are equipped with Sveen-Pedersen flotation savealls which have been changed from wood to tile chests during the last year, while No. 2 machine has a "Savalla", sold in this country by Castle and Overton. The Savalla is a completely enclosed flotation unit with a 1000-g.p.m. capacity at 12,000 lbs. solids per 1000 gallons. It is said to be the first such installation in operation in the U.S.

Process glues are used at Deferiet both for aiding flocculation in the savealls, and also as an additive at the headbox on the machines. At the headbox, general addition is one pound of glue per ton of paper in order to aid filler retention and also to improve formation of stock in the sheet. These glues are always added except when running deep colors. Deferiet men have remarked at the improved formation resulting from its use, and the greater color stability and brightness effected.

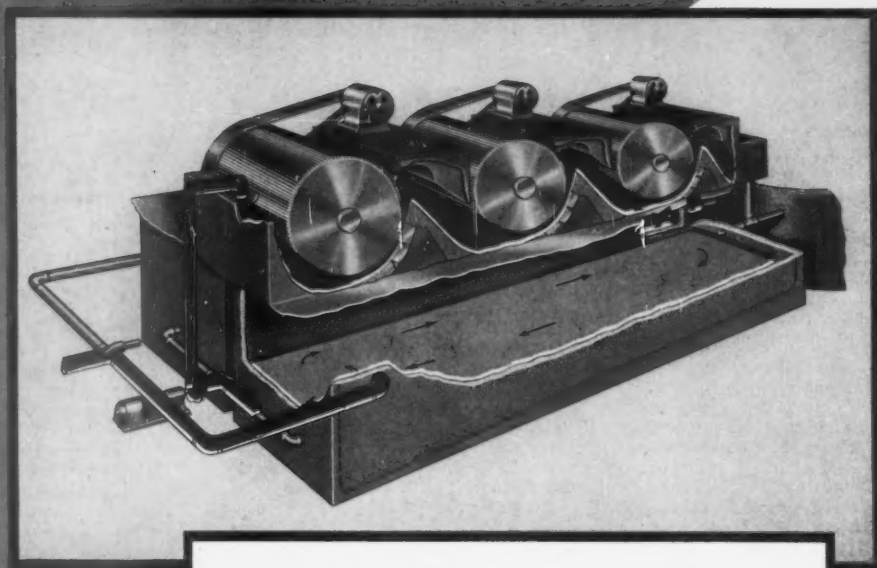
#### Finishing

A new supercalender department was formed in 1947 and it now contains three Appleton Machine Co. supercalenders. One of the larger units handles stock from No. 1 machine, while the other is set to handle coated paper from No. 4. The smaller unit runs on uncoated book stock from No. 3 or No. 5 machines.

In 1948 a sheet department was created and to it was added recently a 100-inch Clark-Aiken rotary cutter. The depart-

(Continued on page 68)

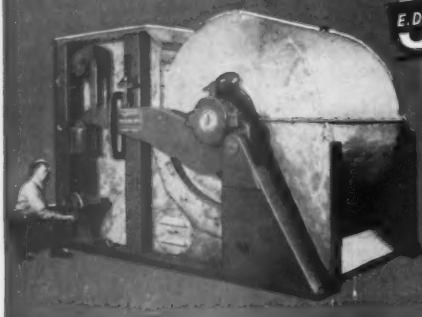
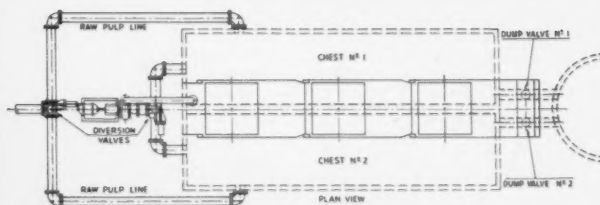
**NO DUMPING — NO SHUTDOWNS — UNIFORM TREATMENT —**



**LEGEND**

Raw stock is admitted to Chest #1. Diversion valves, controlled by liquid level elements, automatically shut raw stock line, circulate stock from Chest #1 through Multi-Beater and into Chest #2; then again through Multi-Beater back into Chest #1, repeating cycle as required.

On last pass, refined batch is automatically diverted to beaten stock chest at the same time the next batch of raw stock is being admitted to whichever of the two chests is empty, and new cycle begins without pause.



**E.D. Jones Pre-Assembled BEATING UNIT**

This easy-to-install "packaged" Beating Unit is the heart of the Continu-flo system. • Its pre-assembled construction means lower installation cost—no assembly in the mill. • Its proved mechanical design embodies the best features of the famous E.D. Jones Patent Beaters — produces better quality stock at lowest cost per unit of refining capacity. • And its integral motor support saves floor space. Available for either tub or multi-beater installation.



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**E.D. Jones**

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Here's the answer to the problem of maximum refining quality at minimum refining cost. The only continuous batching system that guarantees full automatic control, Jones Continu-flo double-chest batching with Jones Beating Units offers you

**Batch-refining quality with the tonnage and economy of continuous operation**

***Positive uniform treatment of all stock, with readily reproducible results***

**Greatest refining capacity and lowest operating cost per ton of any type of beating or refining system.**

And no shutdowns for dumping! — because once the Micro-flex Control is set for the required number of passes, operation is continuous and the discharge of refined stock and admission of raw stock is automatic and simultaneous.

Ask your Jones representative or write us direct for details and drawings of this latest Jones development.

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PITTSFIELD, MASS.

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- More refining capacity — up to twice as much as any similar machine
- Lower operating cost — up to 65% power saving over conventional beaters
- More flexibility of operation
- Fully automatic control
- Proved mechanical design
- Lower installation cost — no assembly of Beating Units at mill
- Less floor space — motor support is an integral part of Beating Unit
- Simpler floor construction — minimum floor loads, no shifting loads
- Positive control of roll pressure and recirculation makes it impossible for untreated stock to pass through unit
- Lower maintenance — completely non-corrosive where exposed to stock

**BUILDERS OF QUALITY STOCK PREPARATION MACHINERY**



**VOLUNTEER FIRE DEPARTMENT AND AMBULANCE SYSTEM** in Deferiet, N.Y., is a joint endeavor between the St. Regis Paper Co. mill, the village, and four local labor unions. Some of those responsible are shown here with the fine equipment. From left;

L. C. Robinson, St. Regis Personnel Director; Alfred Davis, President of Firemen and Oilers' union; Gilbert Delosh, Sr., Fire Chief; Albert Benson, President of Machinists Union; Archie Mussott, former President of Papermakers Local; C. C. Wenzel, Di-

rector of Personnel for St. Regis in Northern New York; D. A. Moran, St. Regis Deferiet Resident Manager; Joseph Powell, President of Pulp & Sulphate Workers; and Donald Rigabar, Assistant Fire Chief and chief of volunteer ambulance drivers.

ment contains four Harris-Seybold trimmers handling stock 94 to 74 inches in width.

#### Other Improvements

Rebuilding of the power plant began in 1945 and has now been completed. In the enlarged building were installed two 100,000-lb. capacity Combustion-Engineering boilers rated at 850 lbs. steam pressure each; a General Electric 5000 kw turbine; and a Westinghouse 6000 kw turbine.

Deferiet has a completely new machine shop with all necessary equipment. Included is a Farrel Birmingham 216-inch face, two-wheel roll grinder; and an S.C. Rogers 110-inch knife grinder with segmented grinding cylinder.

As D.A. "Pat" Moran, resident manager, told *PULP & PAPER*, there is still much work to be done and modernization, of course, is a continuing project. But Deferiet today is now not just the first St. Regis mill, it is also one of its finest.

all St. Regis plants and St. Regis customers.

The central laboratory has separate sections for analytical, pulping, paper, coating and bag testing laboratories; a special library room; and a control room for testing which is kept under constant humidity-temperature control.

Since centralization the department has developed some new lines of kraft papers—particularly latex-treated kraft for the manufacture of felt base linoleum, wall board, etc.; packaging papers and bags for special strength and resistance for handling corrosive chemicals. As a basic raw material for converting grades of paper, the Chemigroundwood process was applied to local hardwood on a plant scale, proving the pulp suitable as a portion of the furnish, from both economic and specification standpoint.

Dr. Arnold, who heads the department, was formerly research director for the St. Regis Multiwall Bag Division, and before that was with Brown Co., Berlin, N.H. Working with him as assistant is J. D. Parmele, who has long experience with the company's Printing Papers Division.

## ST. REGIS RESEARCH AND DEVELOPMENT

In keeping with being the original St. Regis mill, Deferiet is now home of a centralized Research and Development Department for the company. This department was organized in 1951 by Dr. K. A. Arnold, technical director, and consolidates investigative work of the St. Regis Printing Papers Division, the Kraft Papers Division and the Multiwall Bag Division. Through the consolidation it is possible to make more efficient use of equipment for all the plants, and to prevent duplication of facilities, personnel, and experimental work.

The present central laboratory was built in 1947 for the Printing Papers Division, and is now the headquarters for the combined staff. This staff is also connected with operating quality control and technical service to customers and foreign licenses. There are 35 men in the Deferiet laboratory, with 10 more working under the section on special bag work at the Pensacola, Fla., plant, under supervision of Robert P. Anderson.

According to Dr. Arnold, functions of the Research and Development Department are:

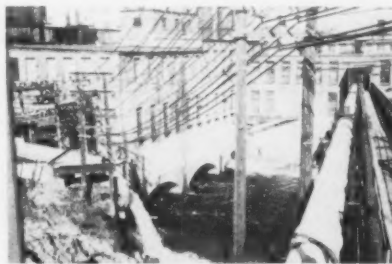
1. To investigate new processes and equipment.

2. To investigate new raw materials for pulping, paper and coating.

3. To outline standards of testing methods and issue specifications for performance standards to St. Regis mills.

4. To survey technical literature and abstract pertinent articles for company-wide distribution.

5. To investigate specific problems for



**THREE ORIGINAL WATER WHEELS** which generated power when Deferiet first went into operation in 1901 are right "smack dab" in middle of present plant as shown by these outlets. These wheels are now owned by Niagara Mohawk Power Corp. and operated for utility power. The large section of Transite pipe at

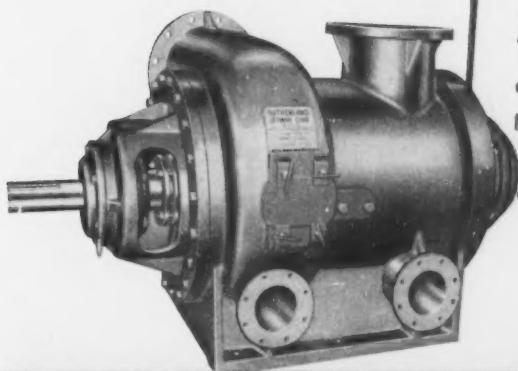


right is for transfer of groundwood stock across river to the paper mill in background. At right is new building housing Central Research and Development Dept. for entire company on second floor, control laboratories on first floor; machine shop in basement.

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## Breaker Trap

SUTHERLAND REFINER CORPORATION

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# ROUND TABLE BRINGS OUT SOME NEW IDEAS

## A WESTERN INTERNATIONAL

### CENTRI-CLEANER, DECULATOR USES DISCUSSED

New trends and technological developments in the industry were reviewed at the 1952 Tri-Association Western International Meeting at Empress Hotel, Victoria, B.C., Sept. 25, 26, 27.

More than 425 delegates attended this joint conference of three organizations on the west coast—the Pacific coast division of the Superintendents Association, the Coast TAPPI section and the Technical Section, Canadian Pulp and Paper Association.

While most were from west of the Rockies, there were representatives of mills and equipment houses from all over the continent. From Germany came Prof. Karl Freudenberg, director of the chemical institute at Heidelberg University, one of the world's foremost authorities on wood chemistry, who was given a keenly attentive hearing when he addressed a luncheon meeting on the formation of cells and the role of lignin in wood structure.

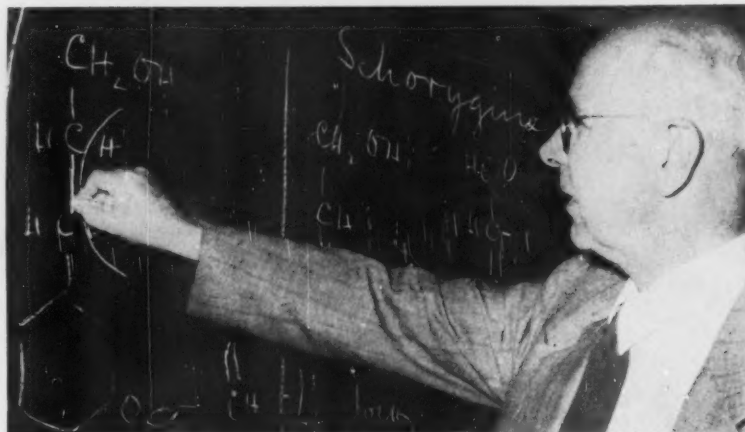
Convention chairman was Marion F. Smith, technical supervisor of Sidney Roofing & Paper Co., a host city mill.

Cool, sunny fall weather prevailed throughout the three-day meeting, and this was particularly welcome when, on the first evening, a three-hour cruise into the Straits of Georgia was made on the Canadian Pacific S. S. Princess Joan. The fine weather was appreciated during the golf tournament at the Victoria Golf Club, Oak Bay, and when women of the party drove out to Government House to be tea guests of Lieut.-Governor Clarence Wallace and Mrs. Wallace.

The only election involved the superintendents' group. A. C. McCorry of St. Regis Paper Co. stepped down as chairman and Gus Ostenson of Crown-Zellerbach Corp., Camas, moved into that spot, with William Clark of Longview Fibre Co., Longview, as first vice-chairman; Charles Walton, Simpson Logging Co., Shelton, second vice-chairman, and Max Bailey, Westminster Paper Co., New Westminster, third vice-chairman.

Mill experiences were exchanged during a round-table with a panel including Einar Walloe, of MacMillan & Bloedel, Ltd.; W. W. Clarke, Longview Fibre Co.; C. E. Ackley, Crown-Zellerbach; Max Bailey of Westminster Paper Co., S. E. Hazelquist, Weyerhaeuser, and Jack Savage, Crown-Zellerbach.

Dr. Ralph Patterson, Powell River Co., asked the panel whether yield and mullen were related in sulfite pulp manufacture, and whether strength was lost as the cook continued beyond a certain point. His question brought the report that in cooking kraft samples had been taken a half hour before and after the blow, and the strength was relatively low at the beginning but gradually rose to a peak and



DR. KARL FREUDENBERG, international authority on cellulose and lignin, lectured at TAPPI meetings and seminars in Glens Falls, N. Y.; Appleton, Wis.; Middletown, O.; Portland, Ore., and Seattle, Wash., on his way to the Victoria Tri-Way Convention where he was featured luncheon speaker. He had more engagements

in paper industry centers on his return to the East. Dr. Freudenberg, born in Baden, Germany, in 1886, has been Director of the Chemistry Institute at Heidelberg University on the Rhine since 1926. He is famed for proving cellulose is a chain molecule, other discoveries.

then declined, the optimum extending over a wide range. The panel considered that maximum temperature and acid concentration had much to do with the final yield and mullen properties. Easy bleaching, high yield and mullen usually went together.

Another question was what effect strong acid had on yield and to this Mr. Savage

replied that about eight years ago, when tests were made, no matter how strong the acid at the start the result was about the same if the cook was maintained at uniform pressure throughout the treatment.

If you start with a higher 'free' you get pulp uniformly cooked and more even in quality, said Mr. Hazelquist, and to get any benefit if the cooking time is shortened, it's necessary to increase the pressure.

One of the panel members stated that good cooks could be obtained by using as much as 40 to 50 percent returned liquor, but that quality declined after that point.

There was some discussion as to the merits of western woods with their heavier fibers compared with species such as eastern spruce. Was there an end product, asked Mr. Ostenson, where the use of western wood was actually an advantage?

Mr. Savage said that such a product was fruit tissue, with its thin caliper and abundance of mullen, but it was obvious that eastern spruce would give higher yield with less sulfur, and that was an important advantage in view of the prevailing shortage of sulfur.

A delegate asked if there was any known method of eliminating lime kiln dust which was often objectionable in the vicinity of sulfate mills. Mr. Walloe said that the use of dry cakes without much chemical helped. His company had also used an improved type of scrubber consisting of perforated wood installed in the



TOP ROW—THE THREE CHAIRMEN of organizations represented at Victoria Tri-Association meeting. Left to right: S. E. HAZELQUIST, Weyerhaeuser Timber Co., Pacific Section TAPPI; A. C. MCCORRY, St. Regis Paper Co., American Pulp and Paper Mill Superintendents Association; MARION F. SMITH, Pacific Coast Branch, Technical Section, CPPA.

LOWER ROW—CORROSION PROBLEMS were dealt with by this task force of experts. Left to right: BILL GRATER; CLAUDE CHRISTIANSEN, DR. WALTER MUELLER, Pulp & Paper Research Institute, Montreal.



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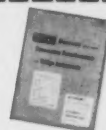


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lime stack, and this performed more efficiently in the spray tower.

R. W. K. Ulin of Fibreboard Products, Antioch, told of putting in spray nozzles to remove calcium salts. "One of our problems at Antioch," said Mr. Ulin, "is that we have no rain from April to October and one prevailing wind. We put in venturi scrubbers on the recovery stack, a double throat and butterfly valve and the setup worked well. We used to have a hundred pounds of dust emanating from the stack daily. Today, only a slight haze above the stack is visible on a clear day."

A delegate asked for an opinion as to the competing values of the inclosed and open headbox, and Mr. Ackley suggested that the situation varied between machines. Dr. Patterson said that at Powell River one machine had a closed headbox and seven were open. Air was one-third to one-fifth less in the inclosed headbox, which definitely reduced air content in stock.

When a delegate inquired as to the maximum amount of Douglas fir that could be used in pulp-making, Mr. Savage answered 100 percent, but qualified this by stating that he referred to multiwall bag production. Discussion indicated that effective use of fir in pulp depended a good deal on machine speed, and that this was being gradually stepped up. It was recalled that not long ago even hemlock was considered an inferior material.

How to remove dirt from pulp was another subject tossed around. This referred to methods and equipment other than conventional screening. Use of magnetic pulleys to remove trap metal was suggested, one member stating that his mill's accumulation of about two gallons of metal from the dump chest in a given time had been reduced to two or three pieces. It was generally admitted that cinders in chips were a real nuisance for which no one had a ready solution.

The success of Howard Smith Paper Mills in Eastern Canada with the Centri-Cleaner, manufactured by Bauer Bros., and described in PULP & PAPER in September, was cited by one delegate, who said that this company was now adopting the machine at all its mills. The first western installation would be at C-Z's Lebanon mill this month.

R. R. Edwards, resident manager for Pacific Mills at Ocean Falls, told of his company's experience in trying to economize in use of sulfur in manufacture of sulfite and kraft pulp. "We've found that we can't reduce sulfidity less than 21 percent without running into trouble," he said. "By trouble I mean a condition where we can't meet paper specifications as to mullen, not necessarily formation."

#### Kraft Pulp Refining

Keith Eadie of MacMillan & Bloedel acted as moderator for the opening day session when T. D. Syme read a paper he and J. A. Dawson of Pacific Mills had prepared on kraft pulp refining. Mr. Syme told of mill tests carried out over past years at Ocean Falls where a wide variation in conditions is encountered in the operation of six paper machines. He emphasized the power economy resulting from use of new refiners. The tests so far had been concentrated on kraft. J. H. MacMillan, West-



**PARTICIPANTS IN VICTORIA CONVENTION**—Top Row, (l. to r.) J. S. MARTIN, Crown Zellerbach Corp., told about by-products of ammonia base sulfite liquor. A. M. CADIGAN, St. Regis Paper Co., who was moderator for one of the sessions; V. L. MAUERMAN, Weyerhaeuser Timber Co., who delivered a paper on utilization of chips from sawmill refuse; KEITH EADIE, MacMillan & Bloedel, moderator. Lower Row, (l. to r.) K. J. BROWN, Forest Products Laboratory, Appleton, Wis., described the development of the cold soda pulp process. H. W. BIAKOWSKY, Weyerhaeuser Timber Co., who spoke on analysis of kraft mill gases; DR. JOSEPH MCCARTHY, University of Washington, who also spoke on technical aspects of kraft mill processing. PROF. KARL FREUDENBERG, Heidelberg University, Germany, who addressed a luncheon meeting on formation of wood cellulose. T. A. SYME, Pacific Mills, and J. H. MACMILLAN, Westminster Paper Co., British Columbians who presented papers.

#### GO WEST FOR DECULATOR



**WILLIAM HICKEY** (left), President of The Rotaread Corp., Bronxville, N. Y., which developed the new Deculator machine and process for removal of air in pulp stock, and his associate, **CARLETON L. CLARK** (right), who gave a paper on it at the Victoria, B. C., Tri-Association meeting, found keen interest among westerners in the new equipment. See PULP & PAPER, Feb. 1951 issue, page 80, for an extensive description.

minster Paper Co. defined dry creped tissue and described stock requirements.

A technical discussion of the determination of hydrogen sulfide, methyl mercaptan, dimethyl sulfide and disulfide in kraft mill process streams was presented by Dr. Joseph McCarthy, assisted by V. F. Felicetta and Q. P. Peniston, all of the University of Washington. A. M. Cadigan, kraft pulp division, St. Regis Paper Co., acted as moderator. An illuminating report on a catalytic oxidation procedure for determining sulfur compounds in kraft mill gases was by H. W. Bialkowski and C. G. DeHaas, Weyerhaeuser Timber Co.

Production of chips from sawmill refuse for kraft was dealt with by V. L. Mauerman, Weyerhaeuser Timber Co., who stressed the role of the hydraulic barker in making available for chips all types of wood and in reducing labor in wood selection.

He reported, but magnetic pulleys did a good job of removing trap metal that would cause damage to chipper knives. However, it would not pick out nonferrous material and for that reason a special metal detector had been

installed under a short section of conveyor belt. This set up a magnetic field and when the trip was released by presence of metal a light was switched on and the conveyor stopped automatically.

#### Corrosion Report

Claude B. Christiansen and his "task force" composed of Dr. Walter Mueller and William Grafer, all of the Pulp and Paper Research Institute of Canada, told about their systematic study of corrosion in alkaline pulping. This project had been underwritten by 13 Canadian companies. Sixty-three mills had responded to questionnaires asking for corrosion data.

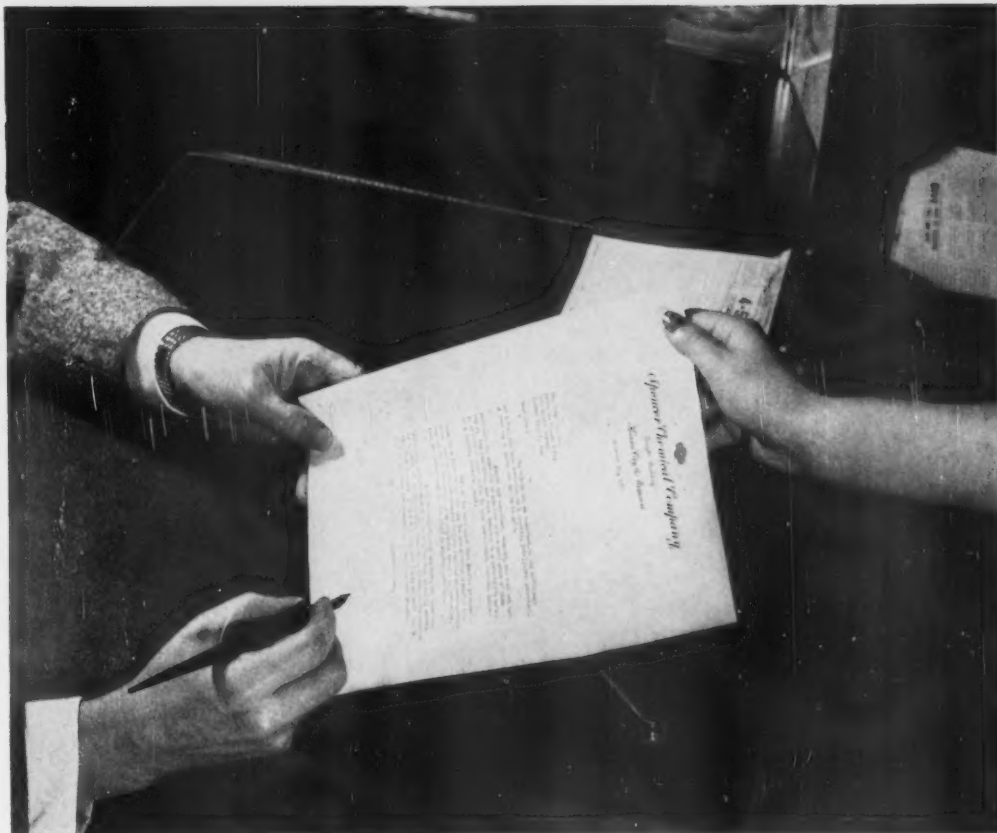
"One point realized now is that there is a need for standardization in digester measurements and the extent and type of corrosion if we are to accomplish the most good for the industry," declared Mr. Christiansen, who said that about half the mills in Canada had now been studied and their equipment inspected. Liquor analysis has been initiated as a part of the over-all survey, and a library will be set up where white liquor and screenings and samples of black liquor, too, will be analyzed for components which may have an influence on the problem.

#### Cold Soda Process

Cold soda pulp and products were described by Kenneth J. Brown of the Forest Products Laboratory, Madison, Wis., in a paper on which J. N. McGovern, also of the laboratory, collaborated. Application to hardwoods was significant, said Mr. Brown, because those species were now regarded as an important additional source of fiber.

Corrugated board is so far one of the principal products of the cold soda process, and two mills are using it—North Carolina Pulp Co. and Green Bay Pulp & Paper Co., said Mr. Brown. In burst and tear strength, aspen and birch have been best, with red cedar second and cottonwood third. Groundwood type papers could also be produced by the cold soda process, but developments along that line had not been so successful. However, it would appear as though cold soda pulp from hardwood could be used as a partial substitute for groundwood or other chemical pulp. In newsprint it could be used up to 20 percent without deterioration in quality, he said.

In production of lightweight corrugated



## The Bond Between Them

Few things are so important to the efficiency of a busy business executive as a capable, intelligent secretary. A good one is worth her weight in gold.

Almost any secretary, however, can turn out more work each day when she is supplied with a good grade of *bond* paper. For few things are more damaging to a secretary's morale or efficiency than trying to type neat-looking business letters on a flimsy, inferior paper.

Much of the bond paper that America produces comes from paper mills that

use the new ammonium bisulfite process. Because Spencer Chemical Company supplies an ever-increasing amount of commercial grade anhydrous ammonia to such mills, each new development in this field is studied carefully.

With the completion of new works now under construction, Spencer expects to be in a position to supply ammonia to a number of additional mills planning to go over to the ammonium bisulfite process. If your mill has such plans, we would like to talk to you about the possibility of supplying your ammonia.



*America's Growing Name In Chemicals*

Spencer Chemical Company, Executive and General Sales Offices, Kansas City, Mo. Plants located at Pittsburg, Kans.; Henderson, Ky.; Charles-town, Ind.; Chicago, Ill.; and Vicksburg, Miss. (under construction)



**PARTICIPANTS IN ROUND TABLE at Victoria Convention (l to r): EINAR WALLOE, MacMillan & Bloedel, Port Alberni, B.C.; JACK SAVAGE, Crown Z, Camas; W. W. CLARKE, Longview**

**Fibre: CHAS. E. ACKLEY, Crown Z, West Linn; MAX BAILEY, Westminster Paper; SVARRE HAZELQUIST, Weyerhaeuser, Longview.**

board red oak had been used in combination with Southern pine sulfate pulp at a ratio of 75-25, and the result had been satisfactory, reported Mr. Brown. A 50-50 combination had worked out all right for creped toweling. The process had only been used three years and prospects were bright, he said.

#### **The Deculator—A New Report**

Carleton L. Clarke, of Rotaread Corp., Bronxville, N.Y., outlined some of the newer improvements to the Deculator, one of the more interesting new machines for the improvement of stock quality by removal of air from pulp stock. The new high density screens offered a big opportunity for the efficient use of the Deculator, said Mr. Clarke, because the use of many screens on big, high speed machines was usually objectionable. It was now possible, he said, to have screens installed on the machine room floor, with the Deculator near the headbox.

There are a dozen installations now in operation in the industry and ten more are being built, reported the Rotaread executive, who recited some of the experiences of specific companies with the Deculator. At one mill where, he said, semi-chemical machine speed had been 1285 f.p.m. de-aerating had made it possible to use more wire with fewer breaks and a speed of 1500 f.p.m. had been achieved. The Deculator was not necessarily responsible

for the improved speed, but it was significant that it could not have been attained without it.

At the Bastrop, La., mill of International Paper Co., Mr. Clarke mentioned, foam had been virtually eliminated from the headbox as a result of the Deculator's use, couch vacuum went up and formation improved, with the drying rate increased. At Crossett Paper Mills, for a bag machine producing 50 to 90 pound bags, the Deculator had brought better formation, increase in density and made it possible to use more water. Breaks due to lumps in the stock had been eliminated, and production was up 8 to 10 tons daily. A new installation was being made on a kraft liner board machine with two headboxes, and it was hoped the Deculator would make it possible to operate on 38 lb. board, using only one headbox. Six Deculators are now in operation in Eastern Canada, with three more on order. Diversified tests had been made with a machine at Gatineau, Que., mill of Canadian International Paper Co.

#### **Ammonia Pulp By-Products**

Utilization of ammonia base sulfite liquor was dealt with by J. B. Martin, of Crown Zellerbach Corp., who said the horizon was steadily broadening for such by-products as C-Z's ORZAN. Its industrial products division, he said, was aiming at developing new combina-

#### **NY's WEST SIDE TO WEST COAST**



**JOSEPH MORNINGSTAR (left), Chairman of the Board of Morningstar, Nicol, Inc., of New York, and JERRY STRASSER (right), the peripatetic Manager of M-N's Pulp and Paper Department, were among a few from far Eastern seaboard who went out west for the Victoria, B. C., Tri-Association meeting. They are suppliers of starches, dextrines and adhesives.**

tions and modifications that would open up new markets. One by-product was a material to plug strata in oil wells. Another was a soil loosener and fertilizer for field crops. There was a good chance that an effective plywood glue could be developed. Sulfite liquor could be used advantageously in tanning but must be free of calcium, said Mr. Martin. A variety of products could be obtained through heat treatment of ORZAN.

Entertainment features included a banquet at which H. A. "Gob" DesMarais of Pennsylvania Salt Manufacturing Co., Tacoma, was master of ceremonies, and a "wake-em-up breakfast" at which Bob Alpen and Sam McKay, Vancouver equipment men (Canadian Ingersoll-Rand and Western Gear, etc.) were initiated into the International Brotherhood of Migratory Peddlers, W. R. No. 2 in a diverting skit.

Entertainment for the convention was arranged by Mel F. Oke, Vancouver Paper Box Co. Don Livingston of Esco, Ltd. headed up the golf committee, and the principal prize winners were: Carl Fahlstrom, Longview Fibre Co.; A. C. McCorry, St. Regis Paper Co.; Ches Pedersen, Esco; Tom Newmarch, Powell River Co.; and Mrs. E. H. Woodruff, wife of E. H. Woodruff, of Rayonier, Port Angeles.



**SHERRY NOSE, FLEA BAIT, DIRTY DUDE, STEW PUSS, SLUG FACE—AND OTHERS. They are all here—members of Waiting Room No. 2 (Seattle) of the International Brotherhood of Migratory Peddlers, who put on the Wake 'Em Up Breakfast show at Western International Con-**

**vention. They initiated two Vancouver, B. C., "peddlers" into their order—Sam McKay and Bob Alpen. Besides this, they had a Scotch bagpiper and champion Scotch lassie highlander dancers for part of their show. They introduced a new song in their program, "We're Just a Bunch of Bums," and some of the verses were:**

**"We were once so rich and happy, we wore shirts with stand-up collars; But we can't afford to buy them, with our 96 cent dollars. So please pardon our appearance, if we look so de-arranged; You can blame it on the story of—The Canadian exchange!"**



# DISSTON does it faster... BETTER



You can fell the biggest when you've got a DO-101 equipped with a helper handle.



There's no binding here. Bucking is a pleasure with the new DA-211 25" Bow Saw.

THERE IS A DISSTON CHAIN SAW WITH MERCURY GASOLINE ENGINE FOR EVERY WOODCUTTING JOB



DO-101 with helper handle



One-Man DO-101



DO-101 16" Bow Saw



DA-211 with helper handle



DA-211 25" Bow Saw

Here's a money-making combination for you... the most famous light-weight one or two-man chain saw in America, the DO-101, and the powerful new two-man DA-211 that packs a full 9 hp. Remember, every saw in the Disston line is a professional first-quality tool, the choice of men who work with power saws for a living. All Disston Saws are powered by reliable, air-cooled, 2 cycle Mercury Gasoline Engines. They have self-

rewinding starters, automatic chain lubrication, guide rails and cutting chains of famous Disston steel. A complete line of attachments is available for every cutting need.

The DA-211 is perfect for the farmer who has a lot of wood to cut. It will handle all sized timber... slicing through 18" oak in less than 16 seconds. The DO-101 is a time and labor saver in preparing fence posts,

barn timbers, wood for fuel, or in harvesting woodlot timber at off-season times. It can be converted quickly into a lightweight two-man unit with rail lengths up to 40'.

Your Disston dealer will be glad to demonstrate any of these fine saws. For his name, write **HENRY DISSTON & SONS, INC.**, 171 Tacony, Philadelphia 35, Pa. In Canada, write 2-20 Fraser Ave., Toronto 3, Ont.

**FREE!**

Send for your free copy of the new fact-packed and picture-packed booklet "How to Cut Costs and Make Money with Disston Chain Saws."

21K

## Notes—Here and There From the Victoria Convention

There is no doubt about it—two men came the farthest to the Victoria, B. C., Convention. One was C. U. WILLERS, mill manager of the sulfite and kraft operations of Stromsnas Bruks, A. B., in the town also named Stromsnabruk (South of Stockholm). They spell the town as one word, the company as two. Bruks means Works. The other—N. LINDBERG, of the Finland Institute of Technology.

Mr. Willers, incidentally had met DR. WALTER HOLZER, assistant research

director of Crown Zellerbach Corp., in Sweden just a few weeks before the meeting. Dr. Holzer, one of the leaders in arranging the Victoria meeting, was unable to attend, being in Sweden for study and mill tours.

Mr. Willers, who had visited Thilmany Pulp & Paper in Kaukauna, Wis., a highlight, he said, of his trip thus far, was planning a day at Crown Z's Camas mill, arranged by Dr. Holzer, and visits to such Southern mills as Crossett and Union Bag.

There were three Europeans in all present—including DR. KARL FREUDEN-

BERG, director of the Chemistry Institute, Heidelberg, Germany, luncheon speaker. He has addressed several U. S. TAPPI groups.

WILLIAM A. ROBINSON, another traveler from far, came to the Victoria sessions from the Hawaiian Sugar Planters Association experimental station at Waipahu, Hawaiian Islands, where he is senior pulp and paper technical director on bagasse by-products research.

Over 28 Hawaiian plantations are supporting the research through which they

(Continued on page 102)

**SOME CONTESTANTS IN TRI-ASSOCIATION WESTERN INTERNATIONAL Golf Tournament at Oak Bay Course on Vancouver Island. Top Row, (l. to r.):** H. S. Hilton, Northwest Copper Works, Portland, Ore.; Carl Castle, Dew Chemical, Seattle; Robert Alpen, Canadian Ingersoll-Rand, Vancouver, B. C.; Robert Williams, American Marietta Co., Seattle; **2nd Row, (l. to r.):** C. R. Clark, Merrick Scale Mfg., Passaic, N. J.; A. C. McCorry, St. Regis Paper, Tacoma, Wn.; C. E. Steeves, Marathon Paper Mills, Marathion, Ont.; **3rd Row, (l. to r.):** W. O. Stevens, W. O. Stevens & Co., Seattle; Wm. Drexel, F. Drexel & Co., Vancouver, B. C.; Alex Ross, F. Drexel & Co.; E. H. Woodruff, Rayonier Inc., Port Angeles, Wash.; **4th Row, (l. to r.):** H. C. Hansen, General Chemical, Vancouver, Wash.; A. M. McGee, Hercules Powder, Portland, Ore.; Herb Beck, Allied Chemical & Dye, Portland; H. B. Peterson, Hercules Powder, Portland; **5th Row, (l. to r.):** Robert Holcomb, Fibreboard Products, Port Angeles; Walter Salmonson, DeZurik Shower, Portland; H. L. Battemillar, Titanium Pigment, Portland; S. A. Russell, General Chemical, Seattle.



**MORE CONTESTANTS IN TRI-ASSOCIATION GOLF Tournament at Oak Bay. Top Row, (l. to r.):** Lennart Lundberg, A. H. Lundberg Co., Seattle; J. E. Garrison, American Cyanamid, Seattle; Carl Fahlstrom, Longview Fibre Co., Longview, Wash.; G. L. Halliman, Longview Fibre Co.; **2nd Row, (l. to r.):** E. J. Carruthers, Canada Starch Sales, Vancouver, B. C.; E. W. Beardsley, Corn Products Sales; Robert Rogers, Van Waters & Rogers Co., Seattle; Kenneth H. Jones, J. O. Ross Engineering, Seattle; **3rd Row, (l. to r.):** F. C. Bacon, Industrial Coatings, Vancouver, B. C.; M. A. Bailey, Paper Machine Superintendent, Westminster Paper Co., New Westminster, B. C.; L. W. Pumphrey, General Superintendent, Westminster Paper Co.; J. H. McMillan, Chemist, Westminster Paper Co., New Westminster, B. C.; **4th Row, (l. to r.):** Jack Sutherland, Hooker Electrochemical Co., Tacoma; Robert Smythe, Ray Smythe Co., Portland, Ore.; W. M. Kern, Electro-Reduction Sales, Toronto, Canada; R. O. Vognild, Hooker Electrochemical Co., Tacoma; **5th Row, (l. to r.):** Robert Baer, Griffiths Rubber Mills, Portland; John Fulton, Pacific Coast Supply, Portland; E. O. Ericsson, Puget Sound Pulp & Timber Co., Bellingham; Gus Ostenson, Crown Zellerbach, Camas.

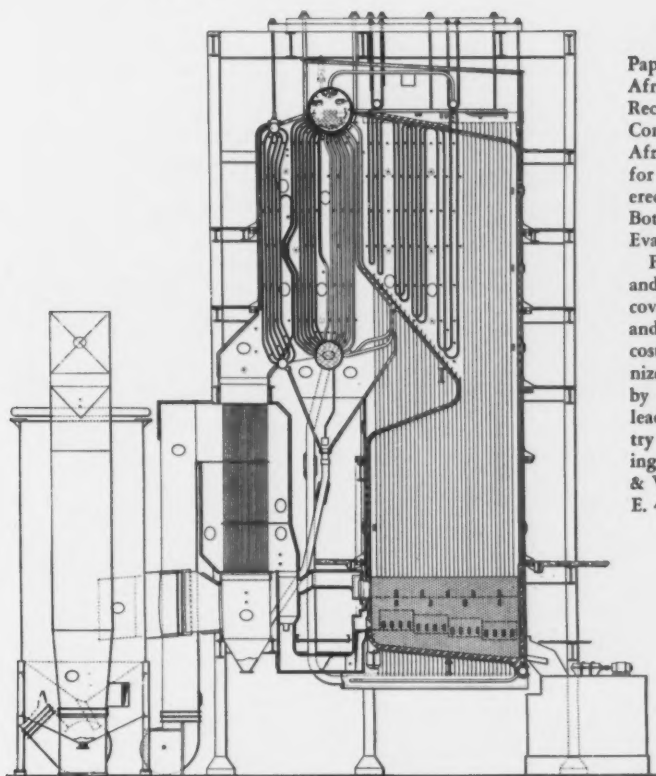




The SPRINGBOK, national emblem of South Africa.

## of B&W Recovery Units REPUTATION GOES A LONG WAY

...to South Africa



200-Ton B&W Recovery Unit with B&W Cyclone Evaporator for Outdoor Installation in Zululand.

Paper Industries, Ltd. of Springs, South Africa, have been operating a 75-ton B&W Recovery Unit for several years. Union Corporation, Ltd. of Zululand, South Africa, have ordered a 200-ton B&W Unit for outdoor installation; it is now being erected. This represents a repeat order. Both units will have B&W Cyclone Evaporators.

From Oregon to Florida, to Zululand and Finland, the reputation of B&W Recovery Units for highly efficient chemical and heat recovery, reliability, and low-cost operation and maintenance, is recognized. It is a reputation firmly established by the performance of B&W Units in leading mills throughout the paper industry . . . a reputation that is rapidly reaching world-wide proportions. The Babcock & Wilcox Company, Boiler Division, 161 E. 42nd Street, New York 17, N. Y.



**BABCOCK  
& WILCOX**



### Brief facts

- 1/4-cord grapple capacity
- 10,000-lb. lift capacity
- Weighs less than 8 tons, complete with 2 1/2-ton truck

\*Price includes basic crane unit with 25' boom, wood grapple, 2 part line, Morin tagline and add'l. counterweight — less truck and mtg. charge — FOB Waverly, Iowa. (Price subject to change)

Here is a low-cost, job-proved Bantam crane with grapple attachment, that can drive anywhere around your property at truck speeds . . . loads up to 16 cords of pulpwood per hr. with one man in the cab and one helper on the ground. High-speed Bantam is also quickly converted for loading big logs with tongs or sling . . . does ditching, grading and roadwork with 8 fast-change attachments. Mail coupon for full details.

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Power Cranes  
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The **LOW-COST** machine with the **BIG** work range

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EE-28-11

## New Wet-Bottom Precipitator At Chillicothe Mill

Initial operation of their first new wet-bottom type electro-static precipitator has been reported by Mead Corp., at its Chillicothe, O., mill. The wet-bottom design is a new development for paper mill applications. Utilizing a circulating black liquor flow, instead of dry dust hoppers and conveyors, a wet-bottom system enables rapid re-use of the collected dust.

The new precipitator, (patents pending) was developed by Research Corp.

At Chillicothe, it removes sodium carbonate from gases leaving a spray-type recovery furnace used in processing black liquor in soda pulp making. The furnace was designed to process approximately 525,000 lbs. of black liquor solids daily. At rated capacity the precipitator will clean 61,250 cu. ft. of gas at about 300F with 95% rated efficiency. Under present mill operating conditions, 350,000 lbs. of black liquor solids are being processed daily with a gas volume through the precipitator of about 44,000 cfm at 270F. Under these conditions, an efficiency in excess of 97% is being realized.

## Cornerstone Laid For Rayonier Mill

Laying of the cornerstone at Jesup, Ga., for the \$25,000,000 chemical cellulose plant for Rayonier Incorporated took place on Oct. 30. Dr. J. A. Leaphart, mayor, reminded the audience that the big undertaking was financed entirely by private means, "a bold and courageous venture during these days of vast government meddling and spending."

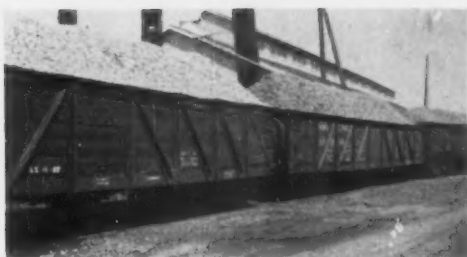
Rayonier's president Clyde B. Morgan recalled that the first half of this century has witnessed tremendous advances in chemistry. Rayonier's president said only 15 years ago the fast-growing, easily replenishable Southern pine had limited uses. But persistent chemical research revealed that chemical cellulose could be extracted from this plentiful tree. "Continuing research will, we feel certain, discover new and equally important uses for the southern pine as well as its cellulose."

## New Paper Cup Plant

The Dixie Cup Co.'s continuing post-war expansion program receives another boost this month with the start of operations in the new 100,000 sq. ft. Anaheim, Calif. plant, a modern one-story production unit. It represents an investment in plant and machinery of over a million dollars and brings to six the number of Dixie Cup plants now in operation.

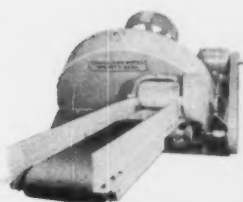
Bringing of water from Chipola River and Cypress Creek, a distance of 18 1/2 miles, by means of an open canal with siphons underneath intervening obstacles, will be effected by St. Joe Paper Co., Port St. Joe, Fla., to provide 30 million gallons daily for its expanded mill. The project cost has been estimated at \$2,000,000 with open canal work by company forces and pump houses and siphons by Tidewater Construction Co., Norfolk, Va., general contractors for the expansion program that will triple mill output.





**ABOVE**—railroad cars loaded with pulping chips

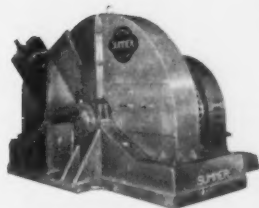
**RIGHT**—unloading chips from specially-designed truck



**66" VENEER CHIPPER**

## CHIPPERS MEAN NEW INCOME, NEW JOBS, FURTHER CONSERVATION

**Today**, and every day, over 1500 railroad freight cars are shuttling from sawmills and veneer plants of the Pacific Coast to nearby pulp, paper and board mills. In addition, numerous especially-designed truck trailers and barges transport on shorter hauls. Their cargo? **PULPING CHIPS**, a product that has, in just the past few years, created a new industry, new jobs, new products—and new conservation where once there was waste.



**STANDARD 72" CHIPPER**

SUMNER is proud to have been a key figure in the pioneering of this industry. The design of a complete line of SUMNER Chippers has developed new income for sawmills and veneer plants. For pulp mills, which in many cases sponsor the installations, valuable standing timber is conserved. Chips produced with SUMNER machines have always met the highest requirements of the industry.

For further information on **YOUR** part in this industry, we invite you to write, phone or wire for details.

Designers and  
Builders of  
Pulp and Paper  
Mill, Sawmill,  
Boardmill and  
Shingle Mill  
Equipment

ESTABLISHED 1892

# SUMNER IRON WORKS

EVERETT, WASHINGTON

# Pulpwood section

"Through research in the next 10 years, more money is to be **MADE** or **SAVED** in pulpwood operations of North America than has been made or saved in pulp and paper manufacture in the last 25 years."—**DR. LINCOLN R. THIESMEYER**, President of Pulp & Paper Research Institute, Montreal.

## THE RIEGEL WOODLANDS CORP.

Forest and land management are problems receiving intelligent attention by Riegel Paper Corp. through its affiliate, Riegel Woodlands Corp., in the planning of pulpwood procurement for the Riegel Carolina 200-ton pulp mill which recently went into operation at Acme, North Carolina (described elsewhere in this issue). With the present Acme mill setup, 450 cords of pulpwood per day are required for its pulp production.

James B. Lattay, vice president of Riegel Woodlands Corp., says the long-range goal of the company is the production of 50 to 75% of its requirements on a rotation basis from its own lands, and to solve the problem of proper utilization of lands within this ownership which do not seed for timber growth.

In 1937 Riegel purchased 140,000 acres of woodlands in Waccamaw Forest—with most of the acreage lying in Columbus and Brunswick counties of North Carolina. Species are pond pine, loblolly, and long leaf—with some red, black and tupelo gum and yellow poplar.

Among the first objectives was the establishment of adequate fire controls, and the planting of areas in the woodlands which had been cut before Riegel ownership and not reseeded. Fast growing slash

**JAMES B. LATTAY**, Vice President of Riegel Woodlands Corp. An experienced forester, his responsibility is to insure continuing yield of pulpwood from the Riegel holdings, and to effect complete wood and land utilization.



pine—with some long leaf and loblolly—was seeded on about 5,000 acres soon after acquirement of the land, and some of this is already ready for harvesting.

In order to get the land on a pulpwood rotation basis, it will be necessary to do some cutting to a seed-tree basis and to continue with the re-seeding program, according to Mr. Lattay. At the present time they are only able to produce about 25% of the mill's requirements from the Riegel Woodlands acreage. But careful cutting practices, the re-seeding program, fire control and the acquirement of some additional woodlands acreage is expected to make it possible to get from 50 to 75% of the requirements from Riegel holdings.

### Land Utilization

Like most large landowners, Riegel Woodlands Corp. has the problem of utilization of land which does not seed for timber growth. Considerable research has already been done by Riegel along these lines—some of which indicates that this land may have real value for agricultural purposes. This work is continuing.

About four years ago, Riegel blocked off an area of 20,000 acres for grazing by Brahman cattle. The fire lanes were seeded to permanent pasture grasses, with the idea that grazing of the cattle along these lanes would remove a large part of the cost of maintenance. Not only was it discovered that this was true, but the cattle would range to some extent into the woods helping keep down the underbrush.

Riegel now owns about 300 head of cattle. The bull calves are sold at 6 to 8 months of age, while the heifers are retained to keep up the stock in the herd. Although most of the present herd was brought up from Florida, Riegel men say the Brahmans were first imported into South Carolina in 1790.

Headquarters of Riegel Woodlands Corp. is at Bolton, about 12 miles from the mill site at Acme, and five miles from Lake Waccamaw, which is in the heart of the forest. Close to the center of its holdings, Riegel has erected a 120-foot fire tower equipped with short-wave radio. Two fire trucks with 2-way Motorola radios can be controlled from this tower, and contact can also be maintained with the main office at Bolton.

### Transportation

Two rail lines cut through the Riegel holdings and through the surrounding area from which the balance of the pulpwood requirements must be secured—the At-



**BRAHMAN CATTLE**—in herds 300 strong—graze the fire lands of the Riegel timber holdings. Roaming into the timber, the cattle help keep down undesirable underbrush and do not disturb the pine seedlings.

**TOUGH  
ENOUGH**  
to take any  
beating.



**T-18  
Chipper  
Knives**

**SIMONDS**

Chips aren't bruised and "beat-up" . . . they're not mashed and of uneven length . . . when they come out from under a Simonds T-18 Knife. But they *are* uniform in size, and that means they "cook" more quickly and evenly . . . make better-grade pulp.

Make sure you aren't losing money in your wood room. Equip all your chippers with these extra-tough knives of special Simonds T-18 Steel. They hold their cutting edge . . . hold your chip-output up and your sawdust-loss down. Check your dealer today.

**SIMONDS**  
SAW AND STEEL CO.

Factory Branches in Boston, Chicago, San Francisco and Portland, Oregon.  
Canadian Factory in Montreal, Que.  
Southern Service Shop in Meridian, Miss. (formerly J. H. Miner Saw Mfg. Co.).  
Simonds Divisions: Simonds Steel Mill, Lockport, N. Y.,  
Simonds Abrasive Co., Philadelphia, Pa. and Arvida, Que., Canada

lantic Coast Line, and Seaboard Airlines Railroad. So that much of the transportation of pulpwood to the mill will be by rail. Another transportation asset is the navigable Cape Fear river which empties into the Atlantic ocean at Wilmington, and down which some pulpwood may be barged. In addition, there are good paved roads to connect with the Riegel logging roads for rapid truck transportation to Acme.

Before going ahead with the mill at its present site, Riegel management contacted the North Carolina State Highway Department and urged them to build a bridge across the Cape Fear river near the mill site. There is no bridge for 22 miles below and 25 miles above the Acme location. As a result of this effort, the State has now under construction a \$750,000 bridge 5 miles upstream which will increase by al-



ONE OF TWO TRUCKS that patrol original 140,000 acres of woodland held by Riegel in North Carolina. These trucks are equipped with 2-way Motorola radios for communication with the central fire control tower near Bolton, N.C.

most 100% the woods area which can be reached by truck.



PULP & PAPER was on hand to see first delivery of wood from Riegel Woodlands Corp. to the new pulp mill at Acme. In this photograph, taken by a P&P editor, Seaboard pulpwood cars behind pile are unloaded by a Harnischfeger crane, in foreground. The Owen grapple is depositing the 5-foot pulpwood logs onto the growing woodpile.

## THE PALEY REPORT AND U. S. TIMBER SURVEY



CLYDE MARTIN, Weyerhaeuser, presided at Chicago meeting.

The forest industries want a factual, realistic survey of timber resources. This was indicated when the Forest Industries Council met at the Congress Hotel in Chicago Sept. 16.

The Forest Industries Council is made up of representatives from the American Paper & Pulp Association, the American Pulpwood Association and the National Lumber Manufacturers Association. Twenty-seven attended the meeting, which was chairmaned by Clyde Martin, Weyerhaeuser Timber Co., Tacoma, Wash. Those in attendance were representative of many phases of the forest industry and from many geographic localities.

There were a number of topics on the agenda, including the Valley Authority situation, expansion of membership, review of pending bills on safety and stream pollution and other topics. However, there were two main topics under discussion at the meeting which occupied the major part of the day and drew the sharpest interest from the delegates. These delegates will report back to the three associations that comprise the Forest Industries Council.

The first of the highlighted discussions was over the Timber Resources Review which is one of the major parts of the U. S. Forest Service program to be cooperated in by the forest industries. This group expressed whole-heartedly its interest in having an accurate survey of the nation's timber resources. The council feels that a tabulation of timber growth supply and

withdrawal every ten years would be desirable.

This survey will require considerable manpower and many in the industry feel that they can help contribute to the survey which would be conducted under the U. S. Forest Service. On the other hand, the broad program of the U. S. Forest Service is divided into 13 tasks. On some of these tasks there is a point of difference with the industry. During this meeting a number of questions were raised as to why the Forest Service has been proceeding along certain lines. Of the tasks that have been listed by the Forest Service, there was more approval of those on the factual side and less interest in tasks that will involve

opinions, particularly in the foreign field. On this point, the news was well received when it was announced that the U. S. Forest Service will not hold its world forestry conference meeting.

Results of this council meeting are still in the formative stage as far as the industry is concerned because members will clear with their own policy bodies. However, some did come instructed on their stands when the second big topic came up—that of the report of the President's Materials Policy Commission—the voluminous Paley Commission Report. The forest industries spokesmen expressed interest only in the phases of the Paley report that discussed the forest resources and the recommendations for future control. Extensive consideration was given to the report and the recommendations as they affected the forest products industries. The council has under consideration the desirability of having the forest industries set forth its position from the report. It is not in complete agreement with many phases of the report, especially where government controlled remedies are suggested.

### M & O BIG CAPACITY CRANE

UP TO 130,000 CORDS of 8 ft. pulpwood are handled a year by this Lorain 50-J crane at the Vermillion Bay, Ont., yard of Ontario-Minnesota Pulp and Paper Co. (M & O Paper Co. subsidiary). A 3/4 yd. Blaw Knox pulpwood grapple is used on a 40 ft. boom to unload gondolas, stockpile the logs and reload gondolas. The average load lifted is 7000 lbs. for 8 months a year, the Lorain works 24 hours a day—for 2 months, 16 hours a day. As many as 1026 cords have been handled in one day.



PULP & PAPER





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**LORAIN TL-10**

**YOUR THEW-LORAIN  
 DISTRIBUTOR CAN OFFER  
 A CRANE FOR EVERY NEED**

Even before the new TL-10 Truck Crane was "born", your Thew-Lorain Distributor offered the world's most complete selection of cranes on rubber. With the new Lorain TL-10, he can now fill all of your needs! No reason now to delay—mechanize your material handling jobs today! The new TL-10 has arrived! Check it over — at your Thew-Lorain Distributor!

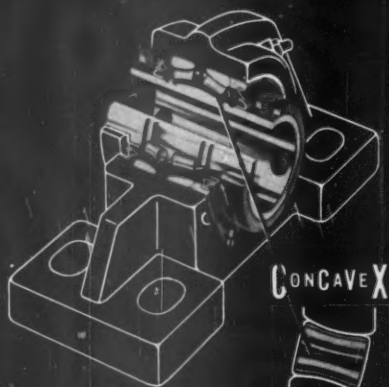


Now you can afford to put mobile crane power to work — even on jobs that do not warrant the investment in high production machines. Mount the new TL-10 crane on your truck—new or used—and know what it means to put your stockpile "on wheels"—what it means to profitably mechanize that multitude of material handling, lifting, loading and erection jobs that ordinarily are handled by high cost labor. Or, mount on barge, pier, dock, bin, etc. to handle materials faster — anywhere! The new Lorain TL-10 is the right size — and the right price — to fit any material handling problem!

The new "baby" Lorain TL-10 is a "chip-off-the-old block". It has the famous Lorain "TL" quality and fast, smooth operation. It is an off-spring of the world's first truck crane built by Thew-Lorain more than 30 years ago. The new TL-10 has a pedigree you can bank on!

THE THEW SHOVEL CO., LORAIN, OHIO

**THEW  
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Originated by Shafer over 3 decades ago, ConCaVex is still the "years ahead" design in roller type bearings. It has met all challenges—shown all industry what the words "anti-friction-efficiency" really means! This basically superior ConCaVex design combines in one bearing the distinct structural and operational advantages of both ball and roller type bearings. Installed in your product or your plant equipment Shafer ConCaVex Bearings will improve your ability to produce a quality product more efficiently at less cost. Ask for full information and engineering assistance. No obligation.

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## Western Association Plans Conference

Western Forestry & Conservation Assn., which will hold its 43rd conference and annual meeting Dec. 10-12 at Victoria, B.C., has scheduled "one of the strongest and most interesting forest conferences ever held," according to Forest Counsel Stuart Moir. Attention will be focussed on progress made in integrated utilization of forest resources.

Exhibits of fire fighting devices, maps, and radio equipment will be shown. The Society of Photogrammetrists is to meet on the day prior to the conference.

## A Note from So. Africa: We Stand Corrected

J. C. Harrison, South African Pulp & Paper Industries Ltd., Johannesburg, South Africa, writes that his company's Enstra mill commenced production using the Pomilio process as long ago as 1939, but subsequently converted to the soda process and is now operating on the conventional sulfate process. A paragraph published in a recent issue of PULP & PAPER indicated that the Pomilio process had only recently been adopted at Enstra.

## Sulfite League Meets At Rhinelander

The annual joint meeting of the Sulfite Pulp Manufacturers' Research League, at which mill presidents and vice presidents sat down with mill technical directors and other top scientists to pool ideas, met in Rhinelander, Wis., for three days recently. The executives heard reports on the past year's progress in pollution control. All in attendance inspected the yeast plant of Lake States Yeast Corp. and the evaporation-and-burning plant at Rhinelander.

League officers are: President, J. M. Conway, president of Hoberg Paper Mills; vice president, Folke Becker, president of Rhinelander Paper Co.; chairman of technical committee, Henry A. Rothchild, assistant to vice president of manufacturing, Kimberly-Clark Corp.; vice chairman, N. L. Malcove, technical superintendent, Northern Paper Mills.

## Ontario Vanillin Plant

Ontario Paper Co., Thorold, Ont., has played a major part in development of a new process for commercial vanillin, used in flavoring and manufacture of plastics, pharmaceuticals and metal work.

## Newfoundland Mills Expansion by Bowater

There are three main objectives of Bowater's Newfoundland Pulp & Paper Mills' current \$4,000,000 expansion program—increased sulfite pulp production through installation of another 7400 cubic foot digester by Horton Steel Works, added capacity for efficient washing and screening of news sulfite pulp and improved blending and storage of all pulps going to the newsprint machines, with a view to improving operating efficiency and resulting in higher output of newsprint.

Sherbrooke Machineries are providing two 8 x 16 ft. stainless steel vacuum filter washers, one 8 x 16 ft. washer of the same type, and two 9½ x 12 ft. stainless steel valveless vacuum deckers.

A new steam boiler capable of producing 140,000 pounds of steam per hour at 625 psi will be followed by a turbo-generator set capable of producing 6000 KW. Suppliers of this equipment have not yet been determined.

Three Jonsson knotters are being supplied by Canadian Ingersoll-Rand. Walmsley (London) is supplying new winder and helical dryer gears, and Dominion Engineering Co. the Cram condensate removal system for No. 5 paper machine.

## Hot water for pulp washing

**uncontaminated... at the desired temperature**

Recover heat from steam released in the digester blow tank with a Swenson Surface Condenser! Its operation is automatic and synchronized with blowing cycles. You'll get *clean* hot water at the desired temperature for pulp washing.

Let a Swenson Engineer help you arrange a condenser system to meet your specific needs!

### SWENSON EVAPORATOR COMPANY

15632 Lathrop Ave., Harvey, Illinois

Pulp Washers • Evaporators • Filters  
• Digester Blow, Surface and Turpentine Condensers

# SWENSON

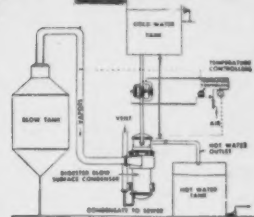
Proved Engineering for the Process Industries  
SINCE 1909

A Division of  
**WHITING**  
Corporation



TALK WITH A SWENSON ENGINEER

HE WILL RECOMMEND THE  
RIGHT EQUIPMENT



Flow diagram shows general arrangement of Blow Condenser System

# DE LAVAL

LIQUOR PUMPS

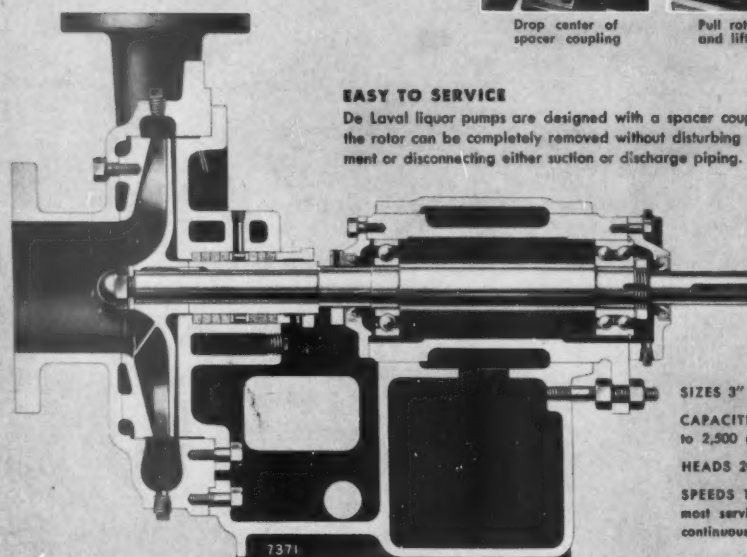
*for tough recovery mill service*



Drop center of spacer coupling



Pull rotor back and lift out



## EASY TO SERVICE

De Laval liquor pumps are designed with a spacer coupling so that the rotor can be completely removed without disturbing motor alignment or disconnecting either suction or discharge piping.

SIZES 3" to 6"  
CAPACITIES 100 gpm to 2,500 gpm  
HEADS 20' to 150'  
SPEEDS 1,150 rpm for most services requiring continuous operation

- One piece suction nozzle with single joint minimizes leakage.
- Eductor vanes on back of impeller relieve stuffing box pressure.
- Rotor can be adjusted with

external adjusting screw to compensate for wear.

- Oil mist lubrication minimizes bearing friction.
- Extra deep stuffing box has inlet and outlet water seal con-

nections and inlet and outlet stuffing box cooling connections.

- Suction liner is easily and inexpensively renewed.
- Heavy stiff shaft withstands severe operating conditions.

The important design features, shown above, explain why De Laval type CL Liquor Pumps (1) take the punishment of tough recovery mill service for years; (2) cut maintenance costs.

These pumps are especially designed to handle "tough" corrosive or erosive liquids such as hot or

cold acids, alkalies, digester liquors, milk of lime, etc. What's more, De Laval Liquor Pumps are easy to get at for servicing, thus substantially reduce downtime.

Write for Bulletin 1100 giving full application and specification data on De Laval pumps for the paper industry.



## DE LAVAL Liquor Pumps

DE LAVAL STEAM TURBINE COMPANY  
813 Nottingham Way, Trenton 2, New Jersey

62145



# Sulphur



*Thousands of tons  
mined daily,  
but where does it all go?*

Did you ever have the misfortune on a steaming, sticky, sultry day to sit it out on a crowded parkway, bumper to bumper, waiting for traffic to clear? No doubt your thoughts were plenty sulphurous but probably not along the lines we have in mind.

We're thinking of the mineral Sulphur and its link with the automobile. Each car accounts for a substantial poundage of Sulphur, some estimates put it at around 25 pounds for the average car. Give or take 5 pounds, it shows that a tremendous tonnage of Sulphur is needed each year to put cars, buses and trucks on the road ready to operate. And don't forget the tire and battery replacements going on every day.

Sulphur enters the automobile picture through the tires, steel sheets, plated and plastic fittings, glass, battery acid and parts, copper tubing and wiring . . . all of which call for the use of Sulphur or its compounds in connection with their manufacture.

Can you wonder that Sulphur goes into industry just about as fast as the sulphur producers of the Gulf Coast Region can get it above ground and cooled preparatory to shipment?



**Texas Gulf Sulphur Co.**

75 East 45th Street, New York 17, N. Y.

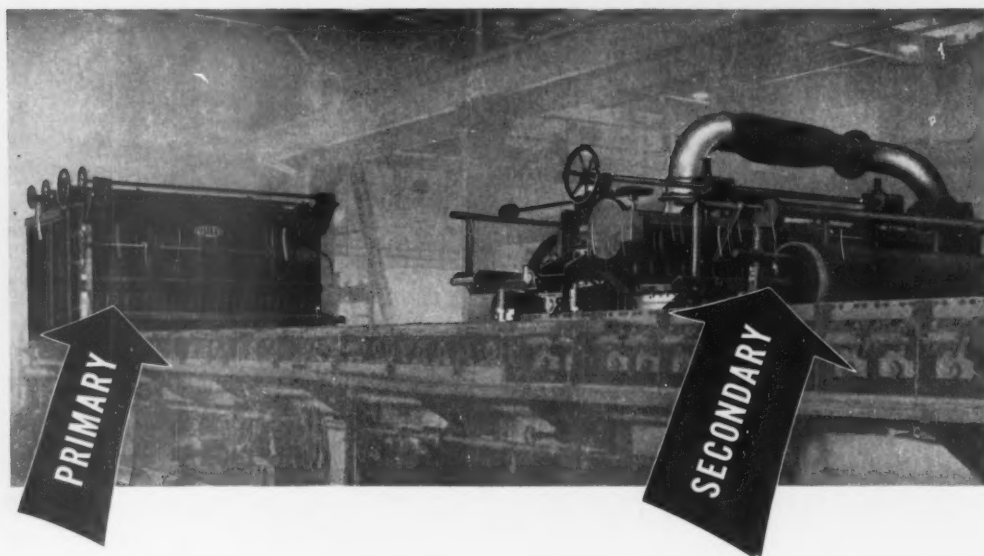


Sulphur Producing Units: Newgulf, Texas • Moss Bluff, Texas

Spindletop, Texas • Worland, Wyoming

# Longview Fibre Company's #6 Machine

... with Inlet and Headbox by **VALLEY\***



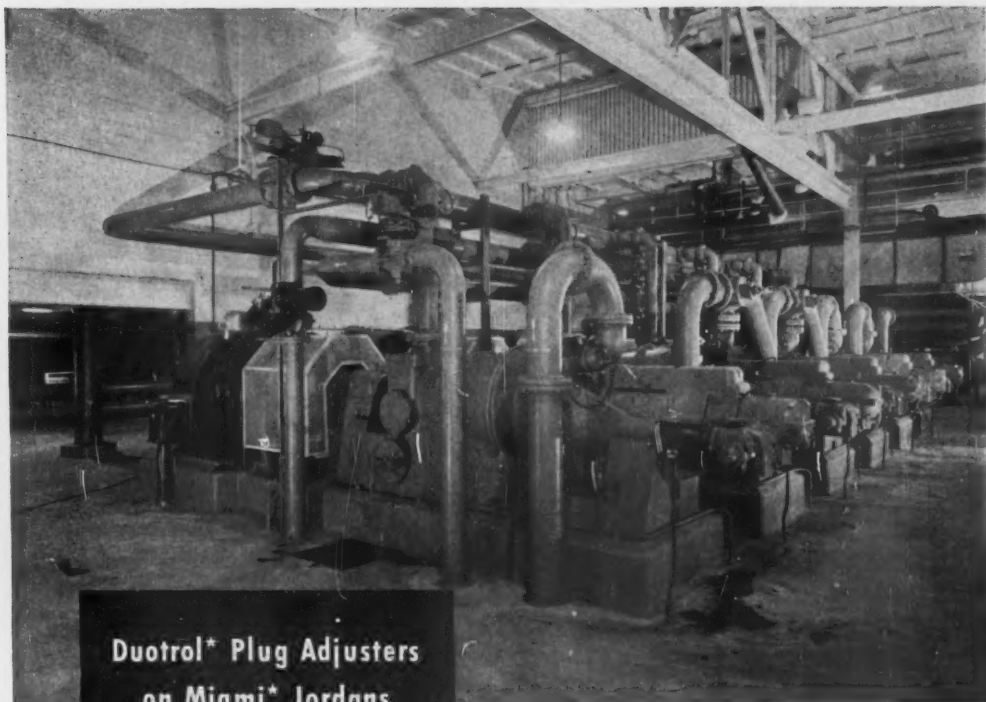
\*Open Primary and Pressure Secondary

When buying a new papermachine  
it will pay you to  
investigate . . .

On MORE and MORE  
paper machines it's INLET  
and HEADBOX by  
**VALLEY**

**Inlet and Headbox  
by  
VALLEY**

Write to  
Valley Iron Works Company  
Appleton, Wisconsin



## Duotrol\* Plug Adjusters on Miami\* Jordans

Six Miami No. 2-A Jordans, equipped with Duotrol, at National Gypsum Co., Pryor, Oklahoma.

The interesting thing about "Duotrol" is the fact that conditions rather than men control the plug setting.

Let the volume of stock in the line vary appreciably and the changed condition "wires" the plug to move in or back off to compensate. Let the density vary and the changed condition again "wires" the plug to change its position with relation to the shell.

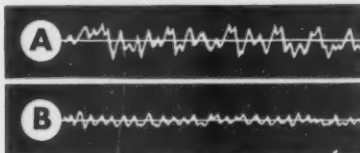
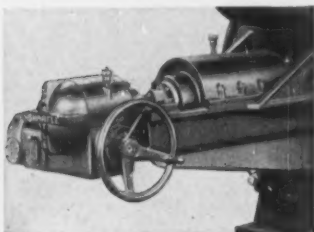
Thus automatically the plug bars are at all times

operating at proper clearance for most effective treatment of the fiber. Haphazard plug setting by handwheel is out.

"Duotrol" plug adjusters are today standard equipment on all HYDRAFINERS® and the majority of Miami jordans sold also carry the "Duotrol" feature. They are also applicable to all other jordans and conical refiners.

*Have us tell you more.*

\*Trade-Mark

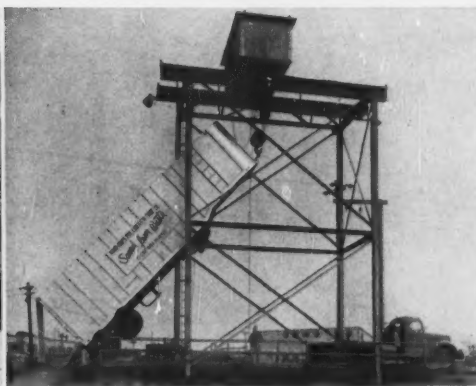


Jagged line A suggests irregular treatment of stock—when plugs are periodically reset by hand.

More even line B suggests far more uniform treatment—when automatic Duotrol plug adjusters are employed.

## SHARTLE BROS. MACHINE COMPANY • MIDDLETOWN, OHIO

DILTS MACHINE WORKS, Fulton, New York • Divisions of THE BLACK-CLAWSON COMPANY, Hamilton, Ohio  
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Northeastern Sales Office: Dilts Machine Works Div., Fulton, N. Y. • Northern Sales Office: 814 N. Superior St., Appleton, Wisc.



AT LEFT, A LINK-BELT CO. travel and tripper mechanism is seen loading chips into a trailer at Wauna Lumber Co., Wauna, Ore. At right, one of the trailers is up-ended and unloaded at Longview Fibre Co. by an Ederer Engineer (Seattle) 15-ton hoist unit.

## Many Lumber Mills, Plywood Plants Make Chips

A fast-growing source of chip supply for the pulp and paper mills on the Pacific Coast, in the South and the Lake States is the lumber industry. The same may be said for the plywood plants, particularly on the Pacific Coast. Many of them are now chipping slabs, edgings, trim, and, at plywood operations, the cores, from six to 10 inches diameter or so, and veneer waste.

Some of this material had previously been used for lath, broom handles, and, of course, much of it for fuel, but the new real "bonanza" is chip manufacturing.

While there have been many chipper installations in sawmills, the potential still hardly has been tapped. In plywood, perhaps, the percentage is higher. A plywood association executive says they are using over 100 chippers. Many of the special Sumner veneer chippers have now been installed.

In just one county in Oregon—Douglas county—a survey showed sawmill waste would support at least a 200-ton pulp mill, presumably kraft because the supply is Douglas fir largely.

In Oregon and Washington, leading states in lumber production, literally many hundreds of sawmills could supply chips which are not now doing so. With several new plywood plants coming into production on the Pacific Coast late in '51 and early '52, number of these plants will total about 80 in western United States.

According to the Oregon Forests Products Laboratory, 50 per cent to 60 per cent of lumber waste in the Far West does not have to be barked before chipping. A pulp mill executive said the recovery of wood possible in sawmills varies widely—from  $\frac{1}{10}$  of a cord to  $\frac{1}{10}$  per 1,000 bd. ft. of logs (equal to cords).

Longview Fibre Co., Longview, Wash., has found it economical to transport chips 200 miles from Eugene, Ore. Fibreboard's new mill at East Antioch, Calif., transports chips by rail up to 350 miles and many sawmills supply it. In Oregon, rail rates are from \$1.48/unit for 5 miles to \$7.37/unit for 400 miles.

Hemlock chips in this area are in short supply. There is strong demand for fir chips, too.

At Santiam Lumber Co., Sweet Home, Ore., for example, a new 66-in. 6 knife

IN WISCONSIN, lumber mills make chips, too. Here are cars loaded, ready to leave Goodman Lumber Co., Goodman, Wis.



Sumner chipper and other equipment including Link-Belt tripper, have been installed and this mill is shipping hemlock chips to Crown Zellerbach's Lebanon, Ore., mill and fir to its Camas, Wash., mill.

Wauna Lumber Co., Wauna, Ore., is shipping to Longview Fibre in Longview, Wash., using 10-unit chip trailers; 30 are in operation for Longview Fibre.

Shepard & Morse Lumber Co., Westport, Ore., Oregon-American Lumber Corp., Vernonia, Ore. are examples of others in the west considerable distance from pulp mill outlets which are chipping. Willamette National Lumber Co., Foster Ore., has recently doubled its chip output, sending hemlock to Publishers' Paper Co., Oregon City; fir to Camas.

In Wisconsin, an example is Goodman Lumber Co., whose sawmill at Goodman, Wis., is making chips.

Aberdeen Plywood Corp., Aberdeen, Wash., is one of the most recent plywood industries to go into chipping—its new \$30,000 plant producing two carloads a day, 20 units per car.

## South Studies Seek Right Use of Seeds

Results in tree growth from 52 seed sources through the cooperation of 25 lumber and pulp companies, federal, state and local agencies is being studied by a committee headed by Dr. Carl Ostrom, of Southeastern (U.S.) Forest Experiment Station, with a sub-committee under active direction of Philip C. Wakeley, of Southern Forest Experiment Station, New Orleans. Some 400 special lots of seeds gathered from the diverse sources will be planted in 20 forest tree nurseries in 16 states. Seeds represent the four dominant Southern pine varieties. Importance of the study rises from proven fact that seeds from one locality do not grow as readily in all locations, and use of wrong seed on a 5000 acre planting might lose as much as \$250,000 in potential growth over 20 years.

## Reichhold Expands

Reichhold Chemicals, Inc., long an important producer of synthetic resins for the forest products industries, has announced its plans to manufacture and market powdered phenolic plastics for a wide variety of industrial applications, with increased uses seen for wood waste products. The company now has capacity to produce 60,000,000 pounds of phenol annually.

## Saskatchewan Resources

Saskatchewan has uncovered vast resources for pulp production, claims J. H. Brockelbank, its minister of natural resources. D. H. F. Black, director of the province's industrial development office, announced a program to assist companies interested in building mills in Saskatchewan. A new inventory shows that more than 16,000,000 cords of white and black spruce are available. The inventory covers 75% of the timber volumes in the mixed wood belt.

By 1954, the minister declared, Saskatchewan's supply of softwoods suitable for pulp will exceed 30,000,000 cords.

## Mohr to New Post; Weber Heads A-B Corn Products Sales

Arthur C. Mohr, sales manager of the Corn Products Department of Anheuser-Busch, Inc., St. Louis, is assuming the position of sales manager, Specialty Products Division of The Seymour Packing Co., Topeka, Kan. The Seymour organization plans an extensive expansion in the sale of dried and frozen egg products to food manufacturers and the consumer trade.

Sales of the Corn Products Department of Anheuser-Busch will be under direction of Arthur E. Weber, general sales manager of the Yeast, Malt & Corn Products Division.



# HOOKER CAUSTIC SODA

## Used in these products and processes:

wood pulp  
soap  
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and many, many others

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## DEPENDABLE DELIVERIES

When you order chemicals from Hooker, you know that you are dealing with a reputable, dependable supplier. You can count on prompt deliveries, timed to fit your production schedule.

## GROWING...TO SERVE YOU BETTER

**New Chicago Office**—To better serve Midwestern chemical users, Hooker has recently opened an office at 1 North LaSalle Street in the heart of Chicago's Loop. Midwestern users need only call Chicago, CEntral 6-1311, to receive fast shipment from the main plant at Niagara Falls. Hooker technical personnel will also be stationed at the Chicago office to assist you with your chemical requirements.

**New plant at Montague, Michigan**—In addition to the existing plants at Niagara Falls and Tacoma, Hooker is building a plant at Montague, Michigan which will increase chlorine and caustic soda production by 100,000 tons per year. Construction will be completed in 1953. This plant will further speed deliveries to Midwestern users.

**Research and development**—Over 100 regular products, and many more research products, have been made available through Hooker's specialized experience in chlorination, hydrogenation, esterification, sulfhydration, hydrochlorination, and fluorination. Complete laboratory and pilot plant facilities are ready to serve you.

**Products available now**—Chlorine, muriatic acid, sodium sulfide, chlorobenzenes, and many other products are available for immediate shipment. For full information, write on your letterhead to *Hooker Electrochemical Company*, 2 Union Street, Niagara Falls, N. Y.

## HOOKER ELECTROCHEMICAL COMPANY

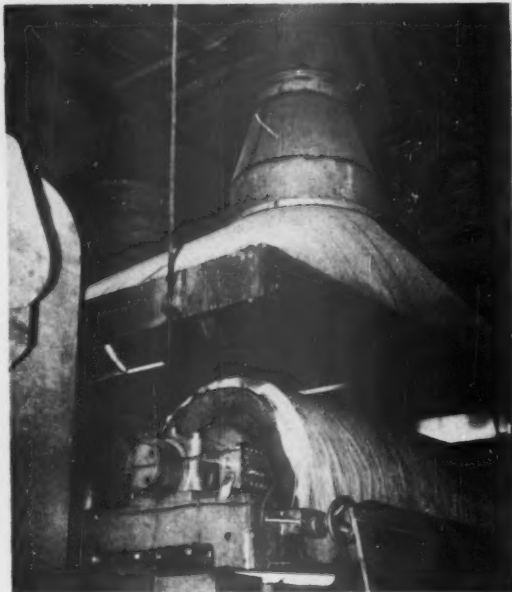
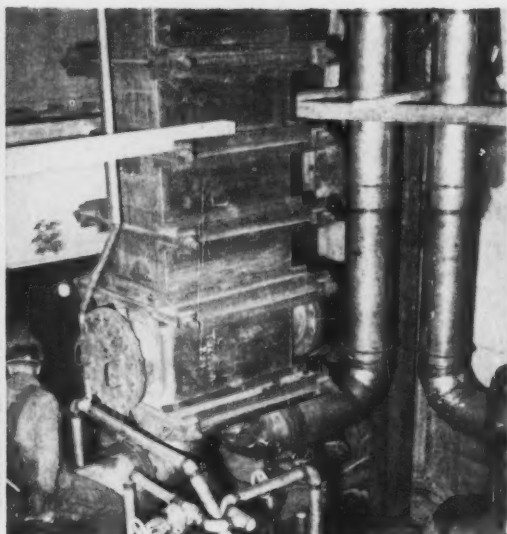
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*From the Salt of the Earth*



2-1242

# WISCONSIN SULFITE MILLS PREPARE FOR NEW PROCESS HOOK UP GATX EVAPORATORS



**TOP LEFT**—Workmen is shown connecting Conkey flat plate heater unit to flash tanks (or vapor bodies) in GENERAL AMERICAN Rosenblad-type 4-body triple effect switch-system evaporator being installed at Rhinelander. Another heater in right foreground of this picture will also be connected. Waste liquor will go from heaters into flash tanks.

**LOWER LEFT**—This is one of two drum dryers in the new plant, with stainless steel hood and vent stack. At Rhinelander the evaporated liquor is to be dried to a powder for development into commercially useable by-products.

**UPPER RIGHT**—This is lower section of a heater. Top of a heater like this is shown in picture at left, being hooked up by the workman. The type of steel recommended for maximum corrosion resistance in the evaporation of waste sulfite liquor is Type 316, with extra low carbon (Type 316 ELC). The long delay in obtaining this evaporator unit for Rhinelander was due to this requirement.

**LOWER RIGHT**—This shows steel framework for the new Semi-Chemical (neutral sulfite) plant at Rhinelander—which will be for glassine paper pulps. Hopper and chip bin installation construction is under way.

After waiting for more than two years since first orders were placed, Wisconsin sulfite mills are at last receiving some operable units of their new Type 316 stainless steel Rosenblad switch system type of evaporators. The switching system, first used in Sweden, is designed to lick the scaling problem—long the bugaboo of attempts to evaporate calcium base liquor.

The complete liquor system is periodically switched with the complete steam condensate system, thereby subjecting all surfaces to the washing action of the condensate to remove scale.

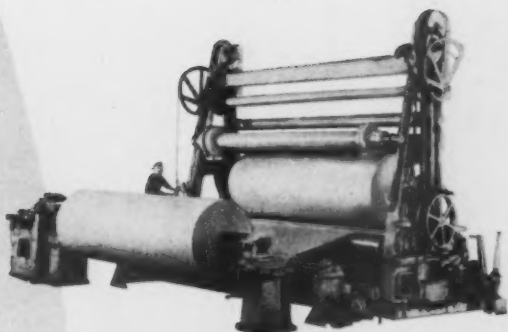
Three Wisconsin mills—Rhinelander Paper Co. at Rhinelander, Consolidated Water Power & Paper Co. at Appleton, and Northern Paper Mills in Green Bay—

ordered Rosenblad type evaporators, made in this country under license by the Process Equipment Division of General American Transportation Corp., but the Korean war, steel shortages and steel strike kept delaying the day of delivery for them.

First units of a 4-body, triple effect evaporator reached Rhinelander in June, others have followed and these were being

# Better Rolls

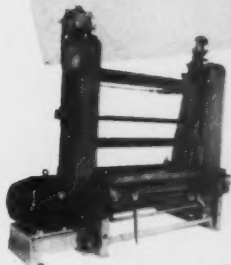
For two generations Camachines have set the top standards for quality in roll production. Every design feature of modern Camachines has been precisely engineered to help you produce rolls of finest quality . . . clean-cut, wrinkle-free and uniformly wound to the exact degree of "hardness" that you need. Camachine-made rolls stand up better in handling and shipping, and because of their uniform density they feed out with a smooth flow that means complete freedom from unwinding troubles. Ask your customers . . . they will tell you that Camachine-wound rolls are a better buy in every way!



**CAMACHINE TYPE 19** One of the famous line of Camachine high-speed heavy-duty mill type winders.

## at lower cost

Camachine winders and slitters are built to keep downtime, repair and replacement costs at a minimum. Even when operating at Camachine's record-breaking speeds, vibration and consequent wear are virtually eliminated. And when normal wear calls for replacements, Camachine's trained service department stands ready to speed the shipment of new parts. Ask your maintenance men and they will tell you why Camachines stay on the job!



**CAMACHINE COMMANDER**  
(Type 10). Popular heavy-duty slitter-rewinder for finishing rooms and converting plants.

## with less effort!

Camachine slitters and winders are easier on the operator. Simplified controls, handy facilities for accurate adjustments, and other important operating and safety features mean greater production with less operator fatigue. Camachine engineering developments of advanced design provide for faster starts, smoother braking and quicker roll changes. Easy accessibility and precision fittings make routine maintenance speedy and efficient. When you ask experienced operators they'll tell you it's Camachine for them, every time!

Camachine engineers will be happy to consult with you regarding fast, low cost production, of top-quality rolls.

# Camachines®

**CAMERON MACHINE COMPANY • 61 Poplar Street, Brooklyn 2, N. Y.**

representative: pacific coast supply company • public service building, portland 4, ore. • 360 california st., san francisco 19, cal.

November 1952

installed this fall, as shown on this page in recent pictures made by PULP & PAPER at the Northern Wisconsin mill.

At Consolidated's Interlake mill in Appleton one heater and one vapor body of its \$2,000,000 4-effect Rosenblad type Conkey plate evaporator arrived in Mid-September and more were coming. Three more heat exchangers and four more vapor bodies were to be delivered. Northern Mills, its evaporator plant built, was patiently waiting, too, for its machinery.

At Consolidated and Northern present plans are to burn the liquor for energy values. But at Rhinelander, an attempt will be made to market dry powdered waste liquor as special new by-products. Its GATX evaporator will handle liquor direct from digesters as well as effluent from the sulfite waste liquor yeast plant now in operation there.

Instead of waiting for its complete order, Consolidated planned to set up a temporary 2-effect evaporating plant as soon as two heat exchangers and three vapor bodies arrive, sometime this fall. Leonard E. Smith, manager, said by that time the liquor burning furnace would be ready to substitute evaporated sulfite liquor for some of the boiler room coal.

(See page 98, Sept. 1952 issue of PULP & PAPER for report on evaporation and burning developments at this mill, using both calcium base and ammonia base liquor, written by R. S. Jolley, Consolidated's steam and combustion engineer).

Jesse M. Holderby, by-products manager at Rhinelander, was hopeful some profitable by-products might come from the use of the drum dryer shown in pictures with this article, which has just recently been installed. But, in any case the liquor will be evaporated to a state suitable for burning, if not to a powder.

Some ten other sulfite mills in Wisconsin and Michigan will be watching these new developments at Rhinelander, Consolidated and Northern with great interest, to see how they prove out economically and in plant efficiency.

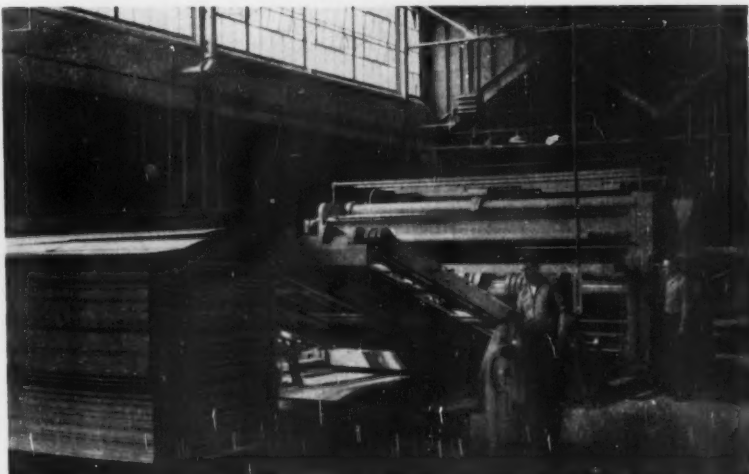
For corrosion resistance, the evaporators are made of Type 316 stainless steel with Type 316 extra low carbon content. This special type of steel was very difficult to get. (Exclusive articles on Swedish mills' methods of evaporation by H. E. Jacoby in Dec. 1951, p. 100, and by Curt Rosenblad in Sept. 1950, p. 63, PULP & PAPER).

Another development marching along at Rhinelander is the new semi-chemical plant. Aspen pulp will be processed and used for its glassine and greaseproof papers along with its Mitscherlich sulfite pulps. Equipment is to include two 16 ft. rotary type Ohio Machine & Boiler digesters, two leach casters, three large No. 410 Bauer Bros. pulpers, and Impco valveless filter.

### B.C. Public Relations

An elaborately accurate scale model of integrated forest industries is being shown in a Vancouver, B. C. department store and later will be available to schools and institutions. It is a British Columbia industry public relations project. Booklets with photos, a prepared address and large photos go along with it.

## LARGEST PRINTER SLOTTER MACHINE



WORLD'S LARGEST PRINTER-SLOTTER MACHINE, this produces a 75 by 185 in. sheet, for one-piece corrugated container at RIVER RAISIN PAPER CO., Monroe, Mich. The unique machine, manufactured by F. X. Hooper Co., Inc., is capable of producing up to 6,000 completed units in two colors per hour. The advantage of the

big machine is that it will make a one-piece box for packaging bicycles, mattresses or other large objects, which formerly required a two piece box. It is equipped with automatic lay-boy for stacking at back end of machine. It is driven by Reliance 50 hp. motors and auxiliary motors.

## COLORADO MILL EXTENSION

An extension of time to Dec. 31, 1952 has been granted to the Columbine Pulp & Paper Inc., to qualify for the final award of the pulptimber unit allocated to its predecessor company in Colorado for construction of a pulp or paper mill.

The predecessor company, Columbine Development Co., has an option on the timber, which is largely beetle-infested Engelmann's spruce in western Colorado, for a \$100,000 down payment. It must by Dec. 31 show financial means and ability to proceed with construction of a mill and otherwise qualify for the timber award.

Donald E. Clark, regional forester of the Rocky Mountain Region, U. S. Forest Service, Denver, Colo., said the Columbine interests has asked for an extension from the previous deadline—Sept. 30, 1952

—and that it had been decided to grant this request.

"No additional obligations or conditions have been established in connection with this extension," he said.

The old Columbine Development Co. was dissolved and the new Columbine Pulp & Paper, Inc., is organized with new personalities primarily in the newspaper field in Colorado. Directors are Donald Bromfield, real estate man of Denver; H. E. Holden of the Loveland Reporter-Herald, and Charles R. Buxton, business manager of the Denver Post.

Proposed site of the mill is at Glenwood Springs on the Colorado west of Denver. Some of the infested timber is now being logged and shipped to a Wisconsin paper mill.

### 8% Pulp Expansion at Soundview in Program

Warrants covering \$24,407,000 Scott Paper 3% convertible debentures have been exercised. The company had offered shareholders rights to subscribe to \$24,952,800 of the debentures at par on the basis of \$100 principal amount of debentures for each 12 common shares, the unsubscribed portion has been taken up by an underwriting group.

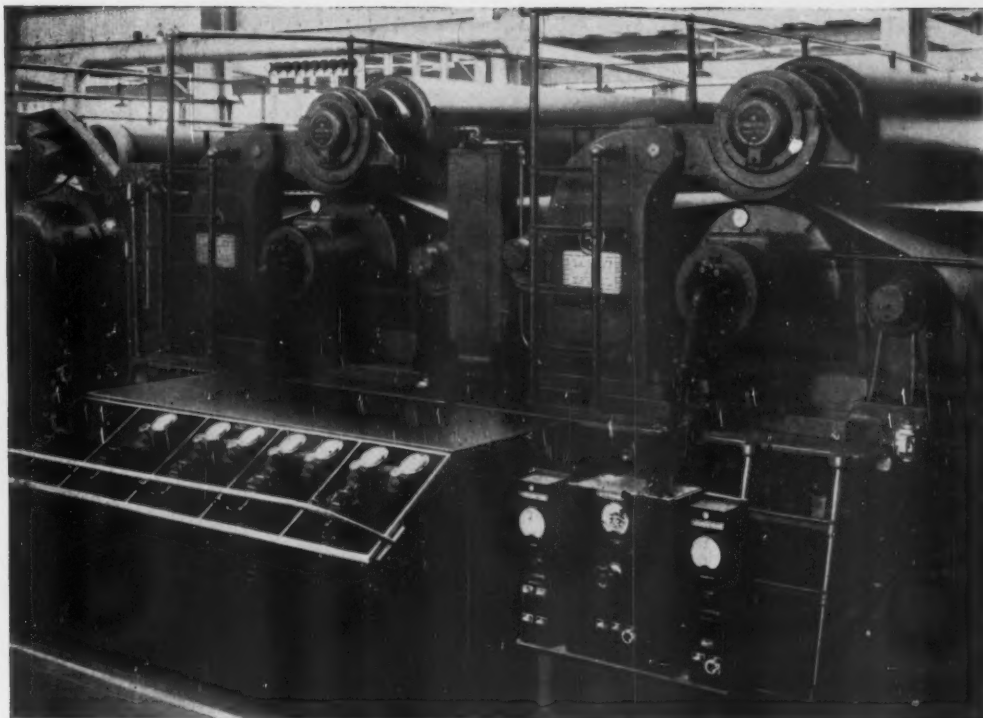
From proceeds Scott expects to use approximately \$16,600,000 for construction of a new tissue mill at Everett, Wash., \$1,000,000 to increase the capacity of its Soundview Division pulp mill by an estimated 8 per cent (now 600 tons a day bleached sulfite); \$1,220,000 to build a new converting plant at Marinette, Wis.; the remainder being added to general funds.

### Brit. Columbia Forest Licenses in Doubt

Applications for forest management licenses in British Columbia providing pulpwood for expansion of mills may be delayed. The Liberal government is no longer in power, having been succeeded by a Social Credit group which is reported to favor revision of present forest legislation. No drastic changes are contemplated in view of its slim margin over the opposition.

Among companies applying for licenses are Powell River Co., to enlarge holdings; Westminster Paper Co., for wood in the Prince George area; Western Plywood Co. for wood near Quesnel; Hecate Development, in the Kitimat valley. Celgar Development (Celanese) has had its application for 2,000,000 acres in the Arrow Lakes district approved, but not granted.





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Hydraulic operation and control is a keynote to its top performance and efficiency—raising, lowering, floating and independently pressure loading both front and rear cylinders—increasing or decreasing nip pressures with additional controls to relieve pressure instantaneously on the entrance

of any foreign object into the nip to prevent damage to clothing and rolls.

The hydraulic system provides a vibration dampener that results in a steadier press roll action—assures a more uniform sheet—increases life of rolls and felts. Maintenance costs and down time are at minimum with this new press design.

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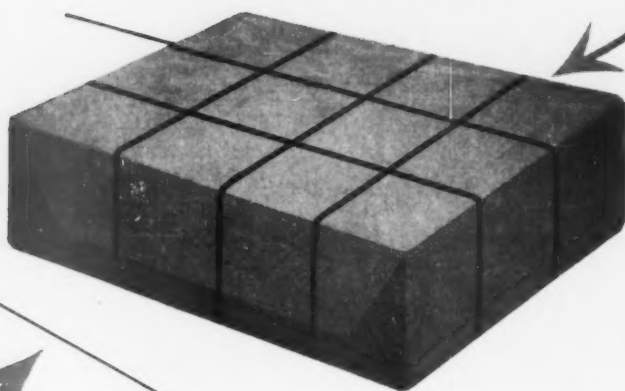
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wood pulp



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Airveyor installation for unloading lime to storage for re-causticizing system. Right: layout of the system.

## Paper profits come with <sup>THE</sup>**AIRVEYOR** at RIEGEL PAPER MILLS

Profits in paper-making are on the rise at Riegel-Carolina Paper Mills, Acme, N. C. because Fuller Airveyors are cutting handling costs to the core.

This new 200-ton pulp mill is equipped with Airveyors for the bulk handling of process chemicals.

**Fuller**  
CONVEYS BY

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### 3 Airveyors are in use:

- 1 Unloading pebble lime for delivery to re-causticizing system as illustrated. (Handles 10 tons per hour.)
- 2 Unloading pebble lime and soda ash from cars for delivery to storage. (Handles 7½ tons per hour.)
- 3 Unloading salt cake from storage and reclaiming from storage for delivery to the mix-tank in the Kraft mill recovery building. (Handles 7½ tons per hour.)

An increasing number of important pulp and paper mills in all producing areas are finding new savings in Fuller Airveyor systems in handling raw paper-making materials. Each Airveyor installation is custom-tailored to fit specific handling requirements, determined in advance by Fuller engineers. Such service is yours without cost—may be an important factor in finding new cost savings. Write today for complete information.

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November 1952

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# WOODPULP SUPPLY IN UNITED KINGDOM

By Roy Johnsen

Director, Johnsen, Jorgensen & Wettre, Ltd., London

(Written for PULP & PAPER)

Provided the present stability in the price of woodpulp and paper can be maintained, British papermakers are looking forward to a return to a more normal flow of production during the fourth quarter of this year.

By March of this year it was clear that the British paper industry was running into a buyers' market, and this was almost immediately reflected in a fall in the price of Scandinavian bleached sulfite of about £24 per ton between the first and second quarters of this year.

Price falls of similar dimensions were recorded by other types of wood pulp, and some papermakers were reluctant to take up the full reservations which they had made with their suppliers for second quarter shipment.

By the end of June it was evident that consumers of paper had been accumulating larger stocks of paper than they had led their suppliers to believe, and in spite of cuts in the price of most types of paper there was virtually a buyers' strike. Paper consumers adopted a policy of working down their stocks and waiting for further falls in the price of paper.

Most paper mills in the United Kingdom were therefore working short time, or had shut for the summer holidays by the beginning of the third quarter of this year, and their stocks of woodpulp had increased considerably, as witness the following figures for stocks of papermaking woodpulp in the United Kingdom at the end of June, 1951, and 1952 respectively:

## UNITED KINGDOM (Woodpulp Stocks)

1951	1952
243,400 tons	426,600 tons

The recession in the paper trade during the spring and summer of this year is even more heavily underlined when the import statistics for the months of July, 1951 and 1952 are compared:

	Year 1951	Year 1952
<b>SULFITE:</b>		
Bleached (Paper)	11,544	2,030
Unbleached	30,745	13,971
Wet	6,993	3,118
Total — Sulfite	49,282	19,119
<b>Alkaline:</b>		
Bleached	4,040	1,107
Unbleached	22,473	8,641
Wet	5,508	1,456
Total — Alkaline	32,021	11,204
<b>Mechanical:</b>		
Dry	809	213
Wet	55,119	35,235
Total Mechanical	55,928	35,448
<b>Total Chemical</b>	<b>81,375</b>	<b>30,323</b>
<b>Total Mechanical</b>	<b>55,928</b>	<b>35,448</b>
Esparto & Albardin Grass	27,794	3,429
Linen, Cotton, Hemp, etc.	6,448	874
Other Materials	7,895	2,623
<b>Total Raw Materials</b>	<b>179,440</b>	<b>72,697</b>

The most recent import statistics show that British papermakers took an even smaller proportion of their third quarter reservations than during the second quarter, and at the same time Scandinavian bleached sulfite declined in price by a further £32/33 per ton, and stood at about £55/56 per long ton, c.i.f. U.K. ports.

At the time of writing (late September) the market is showing signs of having reached some degree of stability, and a small flow of orders for prompt delivery is beginning to reach paper mills.

Stocks in the hands of paper consumers have probably dwindled to the point where buying for immediate consumption must be resumed in some cases but, as yet, there does not appear to be sufficient confidence in the stability of the present price level to warrant buying for stock to any extent.



## PACIFIC COAST NOTES

J. G. E. (JACK) ELLIS, of Central Engineering Division, Rayonier, Hoquiam, Wash., made a recent trip to Florida—his first to the orange state.

S. C. "MIKE" CARTER has been transferred from the Seattle office of Crown Zellerbach Corp. to the Portland, Ore., office where he will be in charge of the consumer products sales division. WESLEY J. SCHNEIDER, formerly in Portland, but for some years in Seattle, takes charge of the same division in the Seattle office.

CHARLES F. BANNAN, vice president of Pacific Gear & Tool Works, San Francisco, has moved temporarily to Washington, D.C., where he is serving in a key post in the gear division of the National Production Authority.

DONALD G. FELTHOUS, plant engineer, Weyerhaeuser Timber Co. Pulp Divis., Longview, Wash., delivered a talk—"Use of Protective Coatings in Pulp and Paper Industry"—at Insulmastic Corp.'s annual technical forum Oct. 20-22 at French Lick, Ind.

LIEUT. TOM LOFTUS, son of GLEN L. LOFTUS, office manager, Crown Zellerbach Corp., Port Angeles, Wash., has been transferred to Fort Eustis, Virginia. He is in army's transportation corps and plans to follow up by going to law school.

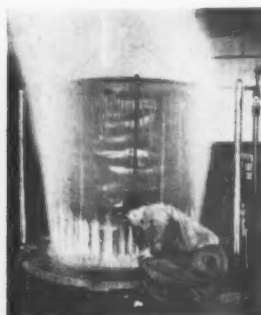
GEORGE P. TOSTEVIN, controller, Soundview Division, Scott Paper Co., Everett, Wash., has been elected to membership in the Controllers Institute.

**MAX R. OBERDORFER**  
New president of St. Helens Pulp & Paper Co.



**MAX R. OBERDORFER** was named president of St. Helens Pulp & Paper Co., St. Helens, Ore., by the board of directors at its October meeting. He fills a vacancy which resulted from death of his father, Max Oberdorfer, who was president and founder of the firm.

The new president, formerly executive vice president and general manager, will continue as general manager.



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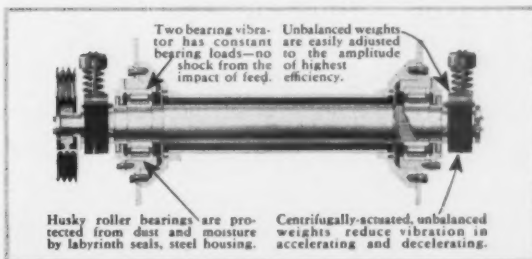
## How to get accurate, high-capacity sizing of wood chips

**T**ODAY, pulp and paper makers demand high chip output at lower cost. Yet sizing must be accurate—the product free of slivers and sawdust.

And that's exactly what you get with the Link-Belt CA Vibrating Screen. Concentric Action imparts even, circular motion to every square inch of every deck. Lively tumbling gives each chip maximum opportunity for sizing.

Thanks to automatic, centrifugally controlled unbalanced weight, you get this high capacity with smaller motors than required by conventional screens. For complete information, call your Link-Belt representative.

Note the full loading and rapid clearing of the top deck on this double-deck Link-Belt CA Vibrating Screen. Installed at an Oregon wood products plant, screen can handle up to 2000 cu. ft. of wood chips per hour.



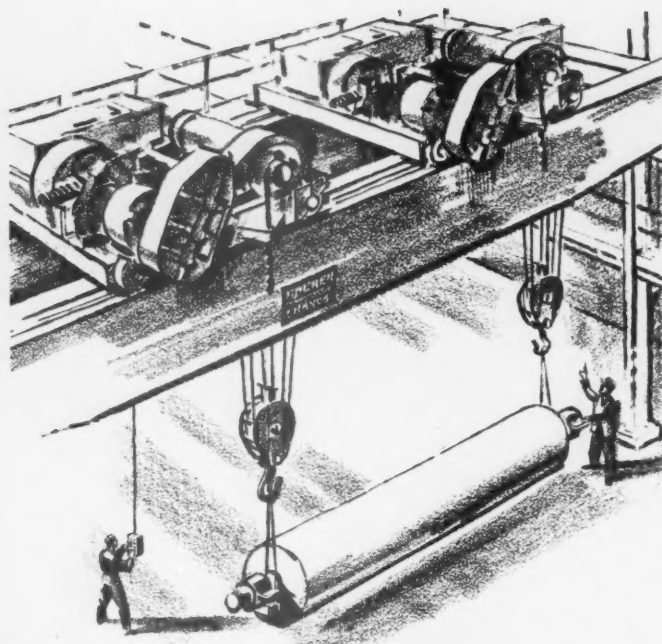
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## "Job-engineered" for a special plant requirement

When this two-trolley machine room crane was installed in a Western pulp and paper mill, the company was planning for future plant expansion. With this in mind, EDERER "job-engineered" what is literally a half crane—with a 49-foot, 8-inch span which will later be extended to 75 feet when the machine room is enlarged. Extension of the span can be made simply—and with no change in the crane's present 24-ton capacity or operating speeds. So suited to future plant-planning was this half crane design, that EDERER has since "job-engineered" similar cranes for other leading pulp and paper manufacturers.

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## Personals

### CANADIAN NOTES

**GEORGE O'BRIEN**, vice president, Powell River Co., Vancouver, B. C., recently returned to the west coast after a vacation trip to the United Kingdom. Other representatives of the Canadian industry recently abroad were **JAMES O'HALLORAN** and **R. J. CHAMBERS** of Anglo-Canadian Pulp & Paper Mills, Quebec City.

**YVES PATENAUDE** has been appointed export manager of the Rolland Paper Co. He was formerly assistant export manager.

**SEVERAL PROMOTIONS** at Bathurst Power & Paper Co. are announced by **W. C. BAGGS**, mill manager at Bathurst, N. B. **ROBERT J. KESWICK** becomes general superintendent; **C. VINCENT CALLAGHAN** moves up from the post of process engineer to kraft pulp mill and semi-chemical pulp mill superintendent; **ERIC S. RICE** from chief chemist to control superintendent; **LEONARD H. PHILLIPS** from kraft mill foreman to chief chemist.

**H. PERCY THORNHILL** has been appointed a member of the executive committee of the board of directors, Fraser Companies, Edmundston, N. B. He was formerly vice-president and treasurer, Sun Life Assurance Co. of Canada.

**WILLIAM E. SOLES**, formerly assistant general manager of Anglo-Canadian Pulp & Paper Mills, Quebec, has been promoted to general manager, according to announcement of **ELLIOTT M. LITTLE**, who recently visited the Pacific coast.

**JOHN C. SCARTH** has taken up quarters in Toronto, Ont., as sales manager of the KVP Co., whose mill is at Espanola, Ont.

**WALTER C. KOERNER**, managing director, Alaska Pine & Cellulose Ltd., Vancouver, B. C., will be one of the principal speakers at the Western Forestry and Conservation Association meeting in Victoria in December. He will speak on diversified wood utilization.

**MARC W. GORMLEY**, for some years with the British Columbia Forest Service, latterly as district forester at Prince Rupert, has joined the forestry consultant firm of **C. D. Schultz & Co.**, Vancouver and Seattle. **A. G. BLAKENEY**, formerly chief engineer of Canadian Forest Products Ltd. Englewood Division, has also joined the Schultz firm.

**R. S. (BOB) LAIRD** has retired as vice president of pulp sales and raw material supplies, MacMillan & Bloedel, Ltd., Vancouver, B. C., because of ill health. In 1929 he joined the former Bloedel, Stewart & Welch organization as a log salesman and five years later was purchasing agent and manager of log sales. In 1947 he became general sales manager and in 1951 vice-president.

### New Course at Maine

Prof. Lyle C. Jenness, head of the department of chemical engineering at the University of Maine, announces that a new course being initiated this first semester of the current school year is "Paper Mill Management." It will deal with industrial methods of managing the various operating departments of a paper mill and the functions of those departments. Charles M. Howell teaches the course.

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superior service to the pulp and paper industry everywhere. Write today for complete information on *Appleton Machine Company Products*.

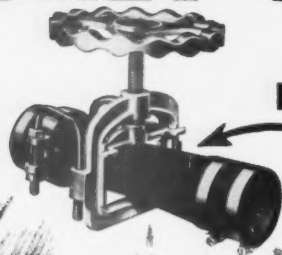
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## CANADIAN MEETING

(Continued from page 76)

hope, and believe, they may be able to establish a bagasse mill for fibre or quality papers. George W. Aljian, of the California and Hawaiian Sugar Refining Corp., in San Francisco, is project coordinator.

Mr. Robinson most recently was with Fibreboard at East Antioch, Calif., before that at the Atenquique, Mexico, kraft mill as technical director, and he came originally from Florida where he had been with Mobile, Pensacola and other mills.

TOM B. HARGREAVES, resident manager of the spanking new groundwood and newsprint mill of Elk Falls Co., just two miles north of Campbell River, B. C., almost made it to the convention. He was "fall guy" in a three car accident on the Vancouver Island east shore highway, just a few miles out of Campbell River, as he headed for Victoria. Two other cars smashed up and his car couldn't avoid them. No one hurt in his car, but just enough fender damage to prevent him continuing the trip.

Incidentally, Mr. Hargreaves, who has been living in a cabin at the famed Painter's Lodge on the "greatest fishing river in the world," will have his newly built Campbell River home completed by the time this appears in print, and can move his family there from Port Angeles, Wash.

HOWARD C. GRAHAM, technical supervisor, and JACK YODEN, paper machine superintendent, represented the new Elk Falls mill at the convention—the first that its staff could take part in. Mr. Graham was formerly laboratories chief for Central Research of Crown Z at Camas and Mr. Youden was from Pacific Mills, Ocean Falls, an affiliate mill, which supplies sulfite to Elk Falls.

MITCHELL THOM, back in his old home town of Victoria, left the meeting for deer hunting a few miles away. "Mitch" has been manager and starter-upper of the new Los Cerritos lemon grass paper mill making paperboards at Cerritos, in Guatemala, now shut down as its U. S. markets folded up. He also managed and had charge of expansion at the board mills of United Shoe & Leather Co. in Mexico City. He expects to return to the paper industry in U. S. or Canada and his address is P.O. Box. Victoria, B.C.

JOHN FULTON, manager of Pacific Coast Supply Co.; STEPHEN THURLOW and J. MC McCURDY, from Dan Charles Agency; and H. ANDERSON, superintendent from Kenora, Ont., mill of ONTARIO-MINNESOTA Pulp & Paper Co. Ltd., took advantage of the lively interest in the new Deculator (name for

PULP & PAPER



new equipment and also a new process), kept three gentlemen from Bronxville, N. Y., busy answering many questions before and after the paper given on it. These were President **WILLIAM HICKEY**, **CARLETON L. CLARK**, who gave the paper, and **JOHN C. STEWART**, all of The Rotaread Corp. Applications for newsprint were particularly of interest.

The machine and process solve a problem as old as this industry itself, removal of air in pulp stock, and first reports of it were published in *PULP & PAPER* in Nov. 1950, and a more complete report on page 80, Feb. 1951. For newsprint, the Deculator is installed just after screens, instead of ahead of headbox. Deculators made possible a 2.4 percent increase in production in the big Three Rivers newsprint mills of Canadian International. The name Deculator (DeCew-lator) is a tribute to Judson DeCew, Canadian engineer now living in Mt. Vernon, N. Y., but Mr. Clark and his partner, Carlo Vicario, also had a hand in its development.

**JOSEPH MORNINGSTAR**, of New York, chairman of the board of Morningstar, Nicol, Inc., of which Paisley Products is a division, was top flight officer of his company to go west for the Victoria meeting. He was accompanied by **JERRY STRASSER**, manager of M-N's pulp and paper department, supplying dextrines, starches and adhesives to the industry.

The new Ross Engineering Corp. Pacific Northwest manager, **KEN H. JONES**, of Seattle, brought his wife along for their first experience in a Pacific Coast meeting and they were very happy to rate it right up on a par with the N. Y.-Canadian Superintendents meetings they used to attend—which they previously considered all along as the "best in the industry."

**C. R. CLARK** was another high company executive from the east to take in the convention. He is vice president of Merrick Scale Mfg. Co., of Passaic, N. J., and he enjoyed the golf on the spectacular Oak Bay golf course overlooking the ocean gateway straits. With him in Victoria was his wife and **IRVING GARD**, western representative, and Mrs. Gard.

The new president of Stebbins Engineering & Mfg. Co., **EDWARD F. TUCKER**, was present from Watertown, N. Y., with **AL QUINN**, president of Stebbins Engineering Corp., of Seattle.

From the farthest east North American mills came **C. E. STEEVES** of Marathon of Canada, Marathon, Ont., and **E. M. DAVIES** of the East Angus, Que., mill of St. Lawrence Corp. For Mr. Steeves it was a chance to meet old friends he worked with formerly in the kraft mill (St. Regis) at Tacoma, Wash.

**G. E. (Slim) SEAVOY**, now a v. p. and

**NASH**  
INSTRUMENT AIR  
COMPRESSOR

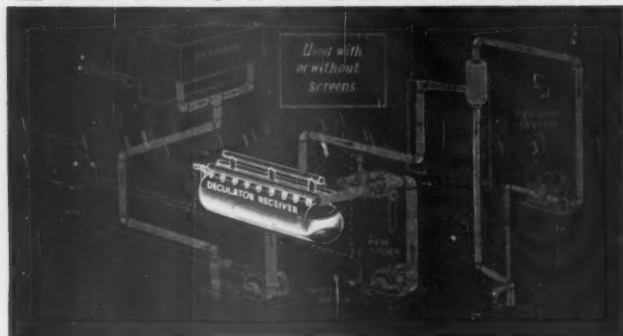
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Permits lower consistency



More uniform surface



Better drying

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**CLARK & VICARIO CO.**

Bronxville, N. Y.

sales manager for Whiting Corp. (he formerly headed its Swenson Evaporator division) found a chance in Victoria to run up the island a few miles to visit BEN NYMAN, retired inventor of the Swenson-Nyman washer, who is now a rancher living just inland from the town of Duncan, B.C. Mr. Seavoy's wife, Kitty, made the trip west, too. The Seavoy's were with BOB FLORINE, Swenson's Coast representative, and his wife.

The convention was part of a honeymoon for LENNART LUNDBERG, now in business with his father, A. HALVAR LUNDBERG, of Seattle, pioneer consulting chemical engineer for the pulp and paper industry, and his bride, the former Miss Florence Benson of San Francisco.

KEN GEOHEGAN, vice president of Howard Paper Mills, Dayton, O., and national president of TAPPI, was top sachem of that organization to make the meeting. DR. LINCOLN R. THIESMEYER, president of the Pulp & Paper Research Institute, and DOUG JONES,

engineer-secretary of the Canadian Technical Association were among several Montrealeers attending.

## BOWATER SOUTHERN OFFICIALS

Here is a more complete list of personnel for Bowater Southern Paper Corp., whose 2-machine newsprint and kraft pulp mill being built in Calhoun, on the Hiwassee River, a tributary of the Tennessee, is to be completed early in 1954.

Sir Eric Vansittart Bowater, of London, is president. A. B. Meyer, of New York, head of the Bowater sales company there, and K. O. Elderkin, general manager at the mill, are vice presidents. Arthur Baker, a top Bowater official in London and founder of Britain's "TAPPI," and A. Brackenbridge are directors.

Victor J. Sutton, from London, and formerly assistant manager at the Bowater Newfoundland Mills, is mill manager and assistant to the general manager. C. E. Opdyke is controller and treasurer. He was secretary and treasurer of the New York sales subsidiary and continues as one of its directors.

## LOUIS CALDER WINS



LOUIS CALDER, above, president of Perkins-Goodwin Co., proves himself a fisherman with this trophy awarded by the National Airlines for the largest tarpon caught during a Florida contest this summer. He beat out such paper industry stalwarts as CECIL F. DAWSON, Dixie Cup Co.; REGINALD L. VAYO, St. Regis Paper Co.; H. M. CARPENTER, Robert Gair Co.; and his own compatriot, S. H. BLANK-INSHIP, Perkins-Goodwin.

## New Mill at Greenwich, N.Y.

It is reported that the former plant of Linen Thread Co. Greenwich, N.Y., has been sold to interests representing Thomson Paper Mills, Inc., facial tissue manufacturers of Thomson, N.Y. Reported plans are for installation of a paper machine and converting equipment. Sherman Weisen, Scarsdale, N.Y., represented the buyers.

Known as the "Dunbarton plant" of Linen Thread, the former mill had operated for 72 years, with original machinery coming from Ireland. The equipment is being moved to Linen Thread's plant at Paterson, N.J.

## New Drives at Soundview

Scott Paper Co.'s Soundview Division, Everett, Wash., has recently installed Black-Clawson drives on the wet ends of their No. 1 and No. 2 Fourdrinier pulp drying machines. They comprise eight No. 1 spiral-bevel gear drives in all, installed at the couch, first, second and third presses of each machine.

D. W. Timmis is secretary of the Southern firm. He had been secretary at Bowater's Newfoundland.

A. W. Bentley, formerly in charge of woodland operations in Newfoundland, is now in charge of woods operations in Tennessee. He had retired from the Newfoundland post in 1948, when he was succeeded by Albert Martin.

Another new appointee is M. J. (Johnnie) Osborne, who was electrical engineer under Mr. Elderkin at Crossett and now holds that post under him in Tennessee. Tennessee is not new to him as he formerly was electrical engineer in the process improvement and electro-magnetic separation activities of Tennessee-Eastman division of the Atomic Energy project at Oak Ridge, Tenn. He was born in Florida and is a graduate of Georgia Tech.

The mill staff under Mr. Elderkin have offices presently in Greenville, S.C.

# yes,

We are proud that all of the piping of the new modern Riegel Carolina Plant wears this emblem



The brass installation plate illustrated here is our mark of satisfaction with a completed job. It means that we believe the best possible piping installation has been made, and, on the truth of that belief, our reputation stands. We intend to make certain it will always represent high quality and efficient work.

Specialists in all types of piping installation for the Industrial and Power industries of the nation.

One of our new brochures which outlines our history, scope of work, management, personnel, tools and equipment and pictorially illustrates some of our more recent piping and equipment installations will be gladly sent on request.

## PIPING AND EQUIPMENT COMPANY, INC.

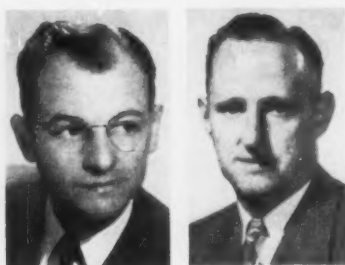
1909 Battleground Avenue  
Greensboro, North Carolina

### PIPING FOR PROGRESS

## RIEGEL CAROLINA — MEN WHO MADE IT



**WALKER HAMILTON** (left), President of Riegel and Exec. V. P. of Riegel Carolina and **WARD D. HARRISON** (right), Vice Pres. in Charge of Production, for both companies. On our cover is picture of **JOHN L. RIEGEL**, Chairman of Riegel and Pres. of Riegel Carolina.



**CURT A. YOUNG** (left), Engineering Manager for all Riegel mills including the new Riegel Carolina subsidiary, and **DR. CHARLES E. HARTFORD** (right), Vice Pres. and Resident Mgr. of Riegel Carolina at Riegelwood, N. C.

John Lawrence Riegel is chairman of the board of Riegel Paper Corp. and president of Riegel Carolina Corp., and as such heads up the entire Riegel operations. Other Riegel officers include Walker Hamilton, president; Aaron P. Mitchell, vice president and general sales manager; Ward D. Harrison, vice president in charge of production; German H. H. Emory, treasurer; F. S. Leinbach, secretary; John A. Segur, assistant secretary-treasurer; and Theodore Riegel, assistant secretary. These men, of course, made the decisions that led to the creation of Riegel Carolina, and they are officers and directors of this company, too.

In the actual construction of the plant, important roles also were played by C. A. Young, Riegel's engineering manager, who helped with purchase of equipment and who was acting manager at Acme for a time during the start up of the new mill; and B. J. Lockhart, manager of Riegel's upper mills, who acted as purchasing agent when the mill was being built.

Following graduation from MIT, John L. Riegel immediately went into the Riegel mills to work. He later had charge of the buying of

raw materials. Elected a director and secretary of the company in 1921, he later served as treasurer and in 1926 was named general manager. From 1929 until 1936 he was both executive vice-president and general manager and in the latter year he was elected to the presidency. In 1951 Mr. Riegel was elected chairman and he has been chairman of the board for Riegel Textile Corp. since 1946. He is now also president of Riegel Carolina Corp., the new company. The older Riegel company was founded in 1862 when John Leidy Riegel installed a first machine in an old grist mill at Finesville, N. J.

Walker Hamilton has been with the company since 1921, when he joined the engineering department, after graduation from the University of Pennsylvania. He quickly climbed the ladder in the organization to purchasing agent in 1923, secretary in 1929, member of the board of directors, vice president in 1936, and executive vice president and general manager in 1945. Mr. Hamilton was credited for much of the development and growth of its converting and coating departments, and development of many

**HARTLEY R. ARNOLD**, Plant Engineer; **J. D. DAILEY**, Production Mgr.; **CHARLES E. ROTH**, Pulp Mill Supt.; **A. R. McBETH**, Woodyard Supt.;

of the specialty lines of paper. He foresaw the further importance to his company of integration with the manufacture of pulp, and was one of those who led the way to the creation of Riegel Carolina.

Mr. Harrison, formerly production manager at Ecusta Paper Corp., and whose early training was in such well known mills as Crown Zellerbach at Camas, and Mr. Young, long outstanding in Southern kraft industry engineering circles, are well known in this industry. Their roles were important in engineering, design and general planning.

As would naturally be expected, management and supervisory personnel for Riegel Carolina at the mill site has been drawn from every section and represent wide experience in pulp and paper manufacture. But it is interesting that only 30 non-local people were taken into the new organization. In residence at the mill are:

**Dr. C. E. Hartford**, vice-president of Riegel Carolina and resident manager. He was formerly manager of the pulp and paper division of Union Bag at Savannah, and before that was chief chemist for Southern Kraft Division of International Paper Co.

**Richard C. Passmore**, assistant secretary. One of the few without previous industry experience, he served with a prominent accounting firm in New York City.

**J. D. Dailey**, production manager. Mr. Dailey has played a key role in five mill start-ups including the one at Acme. Others have been with Gaylord Container Corp.; North Carolina Pulp; Brompton Pulp and Paper; and Kimberley-Clark mills in Canada and Alabama.

**Charles E. Roth**, pulp mill superintendent. He was formerly with Mead Corp. at Kingsport where he was pulp superintendent for 9 years—with a total Mead record of 16 years of service.

**Albert Wiley**, technical director. Was 17 years with Champion Pulp & Paper at Canton, is a graduate of North Carolina State.

**Hartley R. Arnold**, plant engineer. Came from Union Bag at Savannah where he served for 11 years, before that worked for 15 years with Florida Power Co.

**C. Cline Peters**, assistant plant engineer. A graduate of Virginia Polytech, and a member of the airforce during the war, his experience was gained with Champion.

**Roy E. Reynolds**, mill electrician. Mr. Reynolds formerly was mill electrician at Coosa

**E. R. Bartholow**, Area Chemical Engineer; **ALBERT WILEY**, Technical Director.

**RIEGEL CAROLINA MILL Key Staff Executives** (l to r): **RICHARD C. PASSMORE**, Asst. Secretary;



**MORE RIEGEL CAROLINA Key Men** (l to r): **CLINE PETERS**, Asst. Plant Engineer; **ROYSTON**

**REYNOLDS**, Mill Electrician; **JAMES D. RHODES**, Maintenance Supt.; **R. L. PEARSON**, Instrument Foreman; **V. B. BODENHEIMER**, Area Chemical

Engineer; **JAMES R. WRIGHT**, Area Chemical Engineer; **Robert H. Aranow**, Personnel Manager.





## *Congratulations to* RIEGEL CAROLINA

It was our privilege to supply a substantial portion of the stainless steel piping and prefabricated fittings for this new operation.

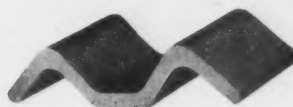
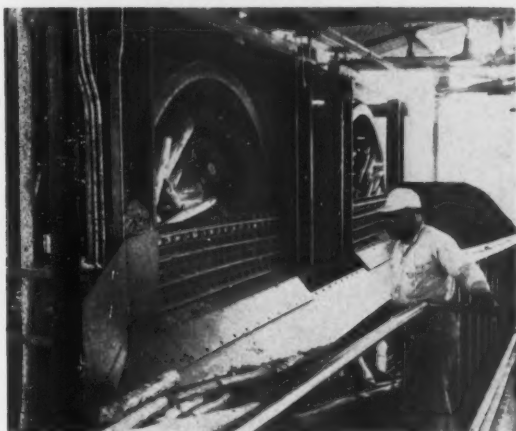
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Exclusively used in F.M.P. drums  
Welded and riveted to heavy ship channels

119- barking drum sales since 1947  
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Barking drums can be furnished with long or short column steel frames to fit customer's requirements. Drumshells shipped completely shop-assembled. Built-up drumshells and steel frames fabricated at Birmingham, Chicago, and Greenville, Pa.

## **FIBRE MAKING PROCESSES, INC.**

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*Manufacturers of Barking Drums since 1915, welded drumshells since 1933*

## RIEGEL STORY (continued)

River, before that with North Carolina Pulp.

*James D. Rhodes*, maintenance superintendent. Although brought to Acme by Riegel from its Milford, N. J., plant, Mr. Rhodes had previous experience with Fernstrom Paper Mills in California and Ecusta Paper Corp.

*R. L. Pearson*, instrument foreman. A graduate of Carlton College and University of Minnesota, he spent 14 years with Marathon Corp., at Rothschild, Wis.

*A. R. McBeth*, woodyard superintendent. Was a forester for three years with North Carolina Pulp, before that with with Abitibi Power and Paper, Port Arthur division.

*V. B. Bodesheimer*, area chemical engineer. A native North Carolinian, he gained pulp and paper experience with Champion's plant at Canton.

*James R. Wright*, area chemical engineer. He was with West Virginia Pulp & Paper at Covington, Va., from 1949 to 1951.

*E. W. Bartholow*, area chemical engineer. An original Riegel man, he was chemist at the company's Milford, N. J., plant.

*Robert H. Aranow*, personnel manager. He was training director for West Virginia Pulp & Paper at Charleston—before that assistant to West Virginia's vice-president, James Towson.

### Riegel Community Sets High Standard

The ambition of Riegel management was to create a model community for its employees at the new town of Riegelwood near Acme, N.C. The opportunity for Riegel to show what could be done in this respect was an excellent one. The mill site is more than 20 miles away from the nearest city, Wilmington, N.C., and the nearest place with a name, Acme, had little to offer in the way of community facilities. So "Riegelwood," the name given to the new community, is truly starting at scratch.

On Riegel Carolina property was laid

### They Built Riegel Carolina

*J. E. Sirrine Co.*, Greenville, S. C., engineers. *C. M. Guest & Sons*, Greensboro, N. C., general contractors.

*Piping Equipment Co.*, Greensboro, N. C., piping contractors.

*Eichleay Corp.*, Pittsburgh, Pa., equipment setting and millwrighting.

*Bryant Electric Co.*, Greensboro, N. C., electrical contractors.

*Steel Construction Co.*, Birmingham, Ala., steel and tank construction.

*Raymond Concrete Pile Co.*, New York City, concrete pile construction.

*Alabama Cement Tile Co.*, Birmingham, Ala., roofing contractors.

*Asbestos Erectors*, New Jersey, asbestos siding.

*C. G. Ray & Co.*, Atlanta, Ga., main building roof construction.

*Pritchard Glass Co.*, Raleigh, N. C., glass and glazing construction.

*Grannis and Sloan*, Fayetteville, N. C., grading construction.

*Stebbins Engineering Co.*, Watertown, N. Y., tile construction.

*Reid Hayden Co.*, Charlotte, N. C., insulation contractors.

out the site for Riegelwood, with various sized and shaped lots for home construction, and with land for erection of a shopping center and a gasoline service station.

Riegelwood is no straight street, square lot community. Located about one mile from the mill, it is in an attractive wooded area with some small streams running through the property. The streets are laid out in graceful curves, the lots are spacious, there are plenty of trees, and a maximum of privacy is assured for each homeowner.

There is no rental housing in the community. Riegel Carolina provides the lot, without charge, to the employee. And the employee is free to develop his own design—so that a typical American village is

assured. A prominent builder from Wilmington set up an office at Acme to provide building service, but employees were free to engage competitive bidding and contractors.

More than 50 Riegel Carolina employees have already taken advantage of the building plan and the 30 beautiful homes already built in Riegelwood bode well for the future of the community.

First of other facilities, a gasoline station has been built on property leased by Riegel. Next was building of a shopping center which Riegel will lease for operation by independent businessmen.

A good school was already available, and ground was supplied free of charge for building of a church.

### IFA—New Group Name

The Forest Conservation Committee of Pacific Northwest Forest Industries has officially become "Industrial Forestry Association." Only the name has changed.

Work of the new IFA, under other names, dates back to the mid-thirties. It founded the industry-wide tree farm program which has spread throughout the nation; developed a forest nursery which in 10 years provided 45 million trees for idle lands, and operates at a capacity of 8 or 10 million seedlings annually.

E. P. Stamm, logging manager of Crown Zellerbach Corp., is chairman of IFA and Floyd Hart, president of Timber Products Co., is vice chairman. A staff of foresters, whose services are available to private land-owners, include Chief Forester W. D. Hagenstein, Portland, Ore.; W. A. Tinney, district forester at Seattle, Wash.; N. E. Bjorklund, for Columbia river area, and H. R. Glascock, Jr., Eugene, Ore., Southern Oregon.

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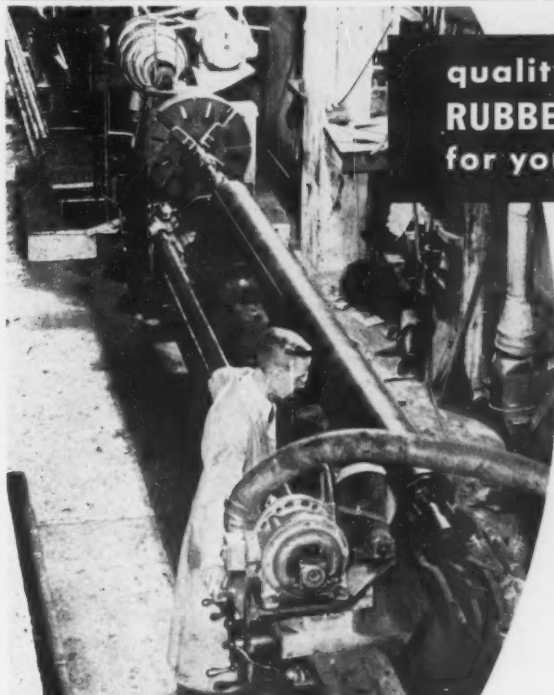
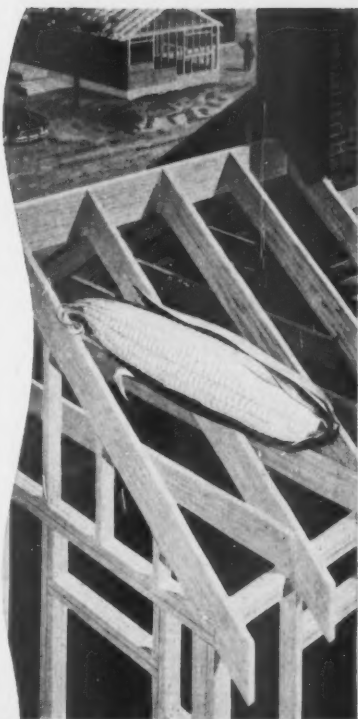
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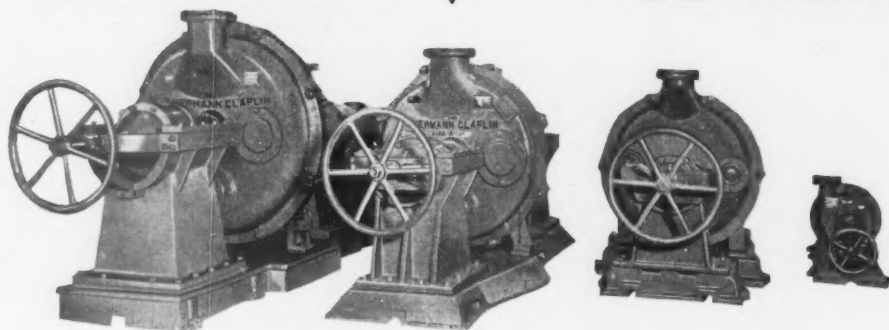
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**Gilbert & Nash Company • Appleton, Wisconsin**

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Those Hamilton people begin with the wool direct from the backs of sheep. They clean it and card it and spin it into yarn, soft and strong, without knots or kinks. Then they weave it into the fabric for Hamilton Felts.

With a magnifying glass you can see the open spaces between the threads of a Hamilton Felt. The number, size and shape of these open spaces determine how much water can be squeezed out by the press. The more you remove at

the wet end of your machine, the less you have to cook out at the dryers.

With more than 300 different styles from which to choose, the Hamilton representative who contacts you is in position to recommend a felt that will do your work better, faster and at lower cost.



# Hamilton *Felts*

SHULER & BENNINGHOFEN, Hamilton, Ohio

MIAMI WOOLEN MILLS

Established 1858

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for High Plate Capacity – Long Plate Life

"Hardy" fabricated screen plates, made by Magnus of chrome-nickel-steel or inconel, have a high-strength, thin sheet design that's specially engineered for *maximum flow*. About 40,000 of these plates are now in service, with performance records that prove these three important advantages:

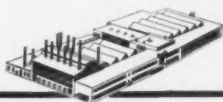
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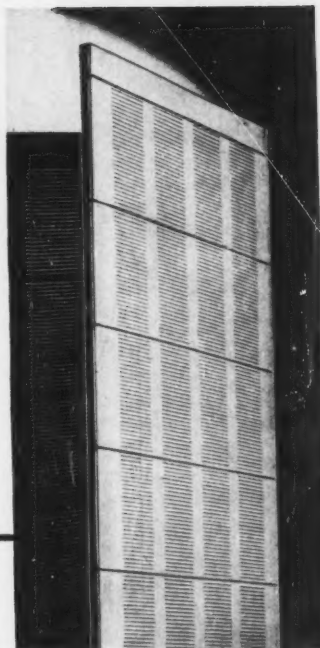
Complete information is yours on request. Or if you like, we'll gladly have an engineer call.



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VALVES: GATE, SWING CHECK, BLOW, GLOBE, ANGLE AND "Y"



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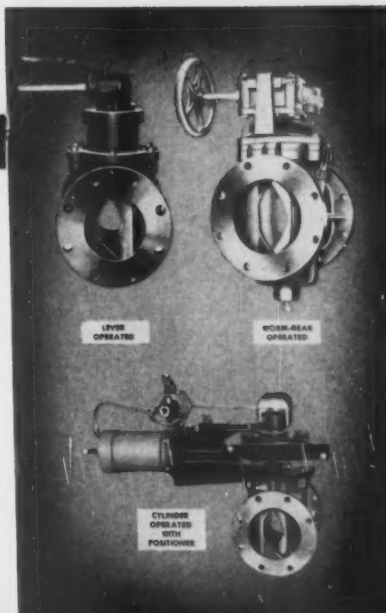
Where fine, accurate adjustments in the rate of flow are desirable, DeZurik VEE-PORT VALVES are your dependable answer. The diamond-shaped orifice permits the most precise throttling and allows no place for fibre build-up. Rate of discharge at any setting remains constant.

• **LEVER-OPERATED VALVES** are used where constant discharge is required with only moderately-fine adjustments in rate of flow.

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**WANTED:** Paper manufacturer in Middle West, having cylinder machines, wants at once man familiar with laminating to direct operations and also sell output of latest 60" laminating machine. Can paste board to board or paper to board. Excellent opportunity for right person. Write to P&P Box 129, c/o PULP & PAPER, 71 Columbia Street, Seattle 4, Washington.

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84" Mill type Oswego Cutting machine, auto. clamp, overhead tape; 57" Dexter with auto. clamp. **NORTHERN MACHINE WORKS**, 323-29 North Fourth Street, Philadelphia, Pa.

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**MANUFACTURING CO.**  
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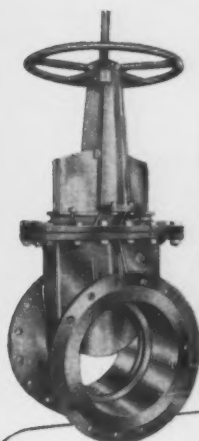
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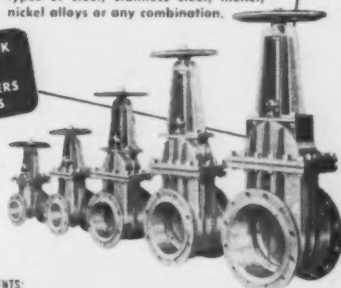


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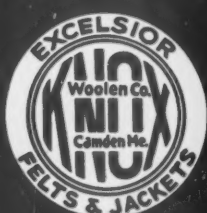
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PULP & PAPER published monthly except July when publication is semi-monthly at Bristol, Conn., for October 1, 1952.

1. The names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher, Miller Freeman, 71 Columbia St., Seattle 4, Wash.  
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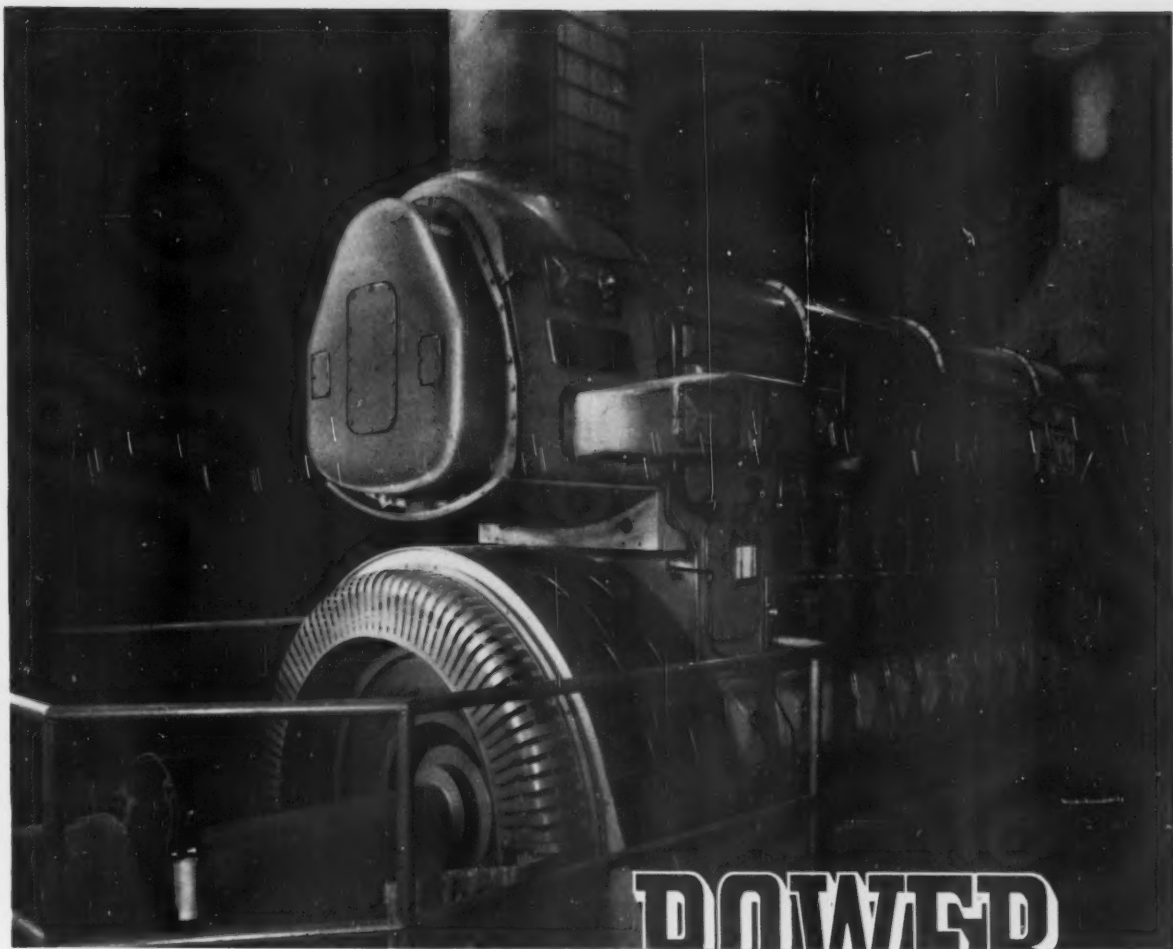


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